

Appendix A

**Chemical-specific TRI
Release and Waste
Management Data, 1988, 1995,
1998, and 1999**



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
71751-41-2 *	Abamectin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	1	250	0	0	251	0	251
		98o	3	1	250	0	0	251	0	251
		98n	No reports							
		99o	3	1	250	0	0	251	0	251
		99n	No reports							
30560-19-1 *	Acephate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	2,250	0	0	0	2,250	1,000	3,250
		98o	7	1,775	0	0	0	1,775	0	1,775
		98n	No reports							
		99o	7	645	0	0	0	645	0	645
		99n	No reports							
75-07-0 **,*	Acetaldehyde	88	67	6,951,807	98,236	2,219,105	194,958	9,464,106	24,930	9,489,036
		95	238	13,435,389	227,200	605,886	155,320	14,423,795	1,099	14,424,894
		98o	272	12,657,793	192,606	412,152	21,557	13,284,108	5,901	13,290,009
		98n	5	2,233	0	0	0	2,233	7	2,240
		99o	278	11,943,416	228,291	754,277	11,745	12,937,729	4,215	12,941,944
		99n	5	697	1	0	0	698	179	877
60-35-5 **	Acetamide	88	1	0	0	0	0	0	250	250
		95	5	8	0	920,000	0	920,008	0	920,008
		98o	9	106	1	2,157,694	0	2,157,801	0	2,157,801
		98n	3	63	0	0	25,474	25,537	10	25,547
		99o	10	107	1	2,452,733	0	2,452,841	0	2,452,841
		99n	2	51	0	0	0	51	2	53
75-05-8	Acetonitrile	88	67	2,194,739	42,223	16,739,010	1,790	18,977,762	416,333	19,394,095
		95	89	1,038,942	7,324	30,336,181	12	31,382,459	10,971	31,393,430
		98o	110	1,029,234	28,862	20,733,190	33	21,791,319	35,073	21,826,392
		98n	22	4,406	0	1,240,903	0	1,245,309	29,981	1,275,290
		99o	111	877,756	14,031	19,487,584	223	20,379,594	658,202	21,037,796
		99n	23	4,907	1	49,874	0	54,782	53,815	108,597
98-86-2 *	Acetophenone	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	39	205,888	971	629,201	3,369	839,429	19,427	858,856
		98o	46	138,515	655	732,358	0	871,528	49,744	921,272
		98n	6	33,106	0	1,649	0	34,755	0	34,755
		99o	43	178,003	699	627,563	0	806,265	35,156	841,421
		99n	5	5	1	62,265	0	62,271	4	62,275
53-96-3	2-Acetylaminofluorene	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	110	0	0	8,500	8,610	1,205	9,815
		99o	No reports							
		99n	4	139	1	0	38,197	38,337	20,648	58,985

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Abamectin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	6,425	10,152	29	16,606	0
	98o	0	0	0	0	6,230	4,165	28	10,423	0
	98n	No reports								
	99o	0	0	0	0	4,918	3,589	23	8,530	0
	99n	No reports								
* Acephate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	10	0	0	0	183,000	15,728	1,409	200,147	0
	98o	90	0	0	0	9,800	12,683	2,186	24,759	0
	98n	No reports								
	99o	70	0	0	0	7,500	17,922	426	25,918	1
	99n	No reports								
*,** Acetaldehyde	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	10,000	32,190	9,239,285	358,459	14,510,964	1,755,026	14,441,699	40,347,623	1,691
	98o	14,000	694	10,275,584	266,784	17,029,181	1,672,903	13,358,695	42,617,841	1,174
	98n	0	0	0	12,964,868	166,000	45	2,281	13,133,194	1
	99o	17,183	1,460	14,573,471	245,738	23,464,460	1,431,358	13,055,672	52,789,342	139
	99n	0	0	130	0	256,700	0	875	257,705	1
** Acetamide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	1,000	0	0	130	920,000	921,130	0
	98o	0	0	81,220	40,954	2	362	2,157,761	2,280,299	0
	98n	0	0	0	21,133	90,561	0	25,547	137,241	1
	99o	0	0	80,637	44,923	2	575	2,452,836	2,578,973	0
	99n	0	0	0	0	166,642	0	53	166,695	0
Acetonitrile	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	3,309,962	2,071,150	23,162,787	4,704,330	11,104,608	5,742,679	31,934,516	82,030,032	1,076
	98o	12,941,704	1,880,831	20,414,930	7,032,353	19,270,706	7,630,788	22,923,308	92,094,620	1,030
	98n	196,874	0	5,904	4,526,522	1,973,227	371,049	1,275,755	8,349,331	1
	99o	12,141,069	2,000,134	41,499,091	7,788,191	20,402,846	8,480,280	21,189,784	113,501,395	66
	99n	515,017	0	34,700	5,257,192	2,844,093	93,449	59,490	8,803,941	11
* Acetophenone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	920,000	9,710	24,949,642	1,171,212	1,313,510	185,062	886,541	29,435,677	519
	98o	0	3,448	32,071,882	1,355,425	719,096	161,672	929,213	35,240,736	0
	98n	0	0	0	59,772	137,644	0	34,752	232,168	1
	99o	0	3,683	33,367,740	1,435,519	866,050	178,690	858,798	36,710,480	8
	99n	0	0	0	0	95,167	0	62,048	157,215	0
2-Acetylaminofluorene	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	310	41	9,800	10,151	0
	99o	No reports								
	99n	0	0	0	0	99,902	0	58,981	158,883	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
62476-59-9 *	Acifluorfen, sodium salt	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	60	5	0	5	70	0	70
		98o	4	476	2,193	0	17	2,686	421,514	424,200
		98n	No reports							
		99o	4	315	4,757	0	0	5,072	222,680	227,752
		99n	No reports							
107-02-8 *	Acrolein	88	12	33,652	0	68,950	500	103,102	0	103,102
		95	21	71,302	4	83,465	0	154,771	0	154,771
		98o	29	184,134	270	95,900	1,351	281,655	665	282,320
		98n	No reports							
		99o	30	204,777	255	170,950	429	376,411	139	376,550
		98n	No reports							
79-06-1 *,**	Acrylamide	88	59	26,019	3,124	2,198,000	756	2,227,899	97,582	2,325,481
		95	82	19,083	1,801	6,279,626	235	6,300,745	3,083	6,303,828
		98o	78	23,349	2,272	6,333,564	0	6,359,185	6,789	6,365,974
		98n	7	129	0	0	0	129	172	301
		99o	80	22,458	369	7,510,853	22	7,533,702	2,224	7,535,926
		99n	10	2,416	1	0	6,267	8,684	3,920	12,604
79-10-7	Acrylic acid	88	158	800,046	16,646	22,262,010	15,950	23,094,652	134,139	23,228,791
		95	189	528,058	2,648	7,840,000	47	8,370,753	45,395	8,416,148
		98o	195	322,224	6,973	4,499,600	79	4,828,876	81,666	4,910,542
		98n	14	368	0	44	48,617	49,029	5,995	55,024
		99o	199	366,380	6,734	2,630,949	1,030	3,005,093	219,423	3,224,516
		99n	11	158	1	0	0	159	688	847
107-13-1 *,**	Acrylonitrile	88	113	4,796,161	6,531	4,562,713	2,150	9,367,555	151,450	9,519,005
		95	105	1,532,128	7,137	5,193,028	618	6,732,911	4,917	6,737,828
		98o	105	1,152,724	1,100	4,005,290	321	5,159,435	8,156	5,167,591
		98n	11	1,264	0	0	0	1,264	917	2,181
		99o	104	978,026	1,172	4,462,492	560	5,442,250	84,849	5,527,099
		99n	13	1,015	1	0	23,244	24,260	13,570	37,830
15972-60-8 *	Alachlor	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	756	280	0	0	1,036	2,940	3,976
		98o	2	1,510	220	0	0	1,730	9,100	10,830
		98n	3	54	0	0	0	54	613	667
		99o	2	755	390	0	0	1,145	1,270	2,415
		99n	3	42	0	0	0	42	655	697
116-06-3 *	Aldicarb	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	3,477	0	0	6	3,483	0	3,483
		98o	3	154	0	0	15	169	0	169
		98n	2	1	0	0	0	1	0	1
		99o	3	171	0	0	256	427	0	427
		99n	3	6	0	0	0	6	156	162

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

			Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
			On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Chemical	Year										
* Acifluorfen, sodium salt	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	600	1,272	65	1,937	0	
	98o	0	0	0	0	13,105	3,237	423,965	440,307	0	
	98n	No reports									
	99o	0	0	0	0	45,498	1,891	227,507	274,896	0	
	99n	No reports									
* Acrolein	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	95	4,800	0	3,752,847	43,323	5,168,260	11,361	154,579	9,135,170	86	
	98o	0	0	3,712,551	38,933	16,430,612	12	278,469	20,460,577	194	
	98n	No reports									
	99o	0	0	4,878,507	176,954	8,581,456	211	365,014	14,002,142	16	
	98n	No reports									
*** Acrylamide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	95	4,037	0	820	43,304	187,170	210,284	6,305,564	6,751,179	3,985	
	98o	162	144	90,200	6,627	160,009	311,267	6,363,850	6,932,259	49,724	
	98n	0	0	0	228,142	62,489	0	291	290,922	1	
	99o	3	0	94,233	9,777	134,468	234,039	7,536,297	8,008,817	2	
	99n	0	0	0	51,885	148,301	45,117	10,310	255,613	0	
Acrylic acid	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	95	3,339,863	34,800	26,544,419	5,033,613	26,801,813	471,136	8,407,802	70,633,446	3,411	
	98o	4,863,156	0	31,350,455	5,916,104	24,168,363	2,077,125	4,895,656	73,270,859	6,994	
	98n	0	101,540	1,605	659,051	452,945	9,417	63,584	1,288,142	1	
	99o	4,680,911	120	20,851,955	6,323,120	32,320,082	1,201,617	3,235,863	68,613,668	111,055	
	99n	0	52,100	1,323	37,623	1,082,263	89	697	1,174,095	1	
*** Acrylonitrile	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	95	12,408,043	69,716	3,326,652	666,245	10,647,695	1,131,550	6,769,787	35,019,688	8,110	
	98o	12,827,695	190	4,841,082	158,067	10,880,197	872,541	5,135,764	34,715,536	1,573	
	98n	0	0	0	24,762	433,873	1,519,681	2,043	1,980,359	0	
	99o	12,435,645	0	3,909,625	211,021	11,415,674	1,743,040	8,476,594	38,191,599	81,964	
	99n	0	0	0	52,049	766,904	16,283	36,383	871,619	0	
* Alachlor	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	95	0	0	0	5,481	120,000	217,179	3,930	346,590	30,000	
	98o	0	0	0	0	17,300	181,800	10,830	209,930	0	
	98n	0	0	0	0	64,944	0	183	65,127	0	
	99o	0	0	0	0	11,000	139,100	2,401	152,501	0	
	99n	0	0	0	0	261,537	0	197	261,734	0	
* Aldicarb	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	95	0	0	0	0	580	20,011	3,472	24,063	1	
	98o	0	0	0	0	502	40,611	149	41,262	10	
	98n	0	0	0	0	16,633	0	1	16,634	0	
	99o	0	0	0	0	376	19,953	166	20,495	0	
	99n	0	0	0	0	170,879	0	162	171,041	0	

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

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Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

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				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
309-00-2 *	Aldrin	88	No reports							
		95	No reports							
		98o	No reports							
		98n	3	307	7	0	22,000	22,314	3,308	25,622
		99o	No reports							
		99n	1	0	0	0	0	0	0	0
28057-48-9	d-trans-Allethrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
107-18-6 *	Allyl alcohol	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	31	168,141	6,519	298,801	1,100	474,561	11,296	485,857
		98o	32	262,353	9,688	424,120	0	696,161	16	696,177
		98n	4	111	0	39,734	0	39,845	0	39,845
		99o	29	263,169	5,041	595,114	755	864,079	28	864,107
		99n	5	520	0	4,832	0	5,352	16,195	21,547
107-11-9	Allylamine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	2	951	40	0	0	991	0	991
		98n	1	0	0	0	0	0	0	0
		99o	2	1,040	450	0	0	1,490	0	1,490
		99n	1	0	0	0	0	0	0	0
107-05-1	Allyl chloride	88	20	149,369	430	250	200	150,249	747	150,996
		95	21	52,698	95	0	481	53,274	13	53,287
		98o	24	70,809	5	0	2	70,816	860	71,676
		98n	2	91	0	0	0	91	864	955
		99o	27	79,237	25	0	0	79,262	1,586	80,848
		99n	3	253	1	0	8,189	8,443	4,526	12,969
7429-90-5 *	Aluminum (fume or dust)	88	357	3,681,998	91,518	250	3,177,625	6,951,391	14,482,254	21,433,645
		95	330	1,976,660	36,979	250	1,872,773	3,886,662	6,293,022	10,179,684
		98o	321	1,302,266	3,618	0	1,907,917	3,213,801	6,802,860	10,016,661
		98n	17	109,949	0	5	3,752,538	3,862,492	41,326	3,903,818
		99o	333	5,634,715	4,753	0	1,346,058	6,985,526	13,809,568	20,795,094
		99n	12	1,144,097	0	0	4,283,907	5,428,004	18,368	5,446,372
1344-28-1	Aluminum oxide (fibrous forms)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	60	133,416	2,805	0	593,000	729,221	4,499,941	5,229,162
		98o	54	26,665	750	0	46,575	73,990	2,936,026	3,010,016
		98n	12	285	0	0	15,572,355	15,572,640	141,030	15,713,670
		99o	50	112,241	756	0	55,341	168,338	2,879,680	3,048,018
		99n	12	338	0	0	30,727,558	30,727,896	347,172	31,075,068

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Aldrin	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	1	77,986	110	26,045	104,142	0
	99o	No reports								
	99n	0	0	0	0	53,598	0	0	53,598	0
d-trans-Allethrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Allyl alcohol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	189,517	0	1,531,138	363,377	1,414,321	422,499	486,288	4,407,140	133
	98o	248,764	0	1,413,165	1,168,713	1,157,533	173,575	653,664	4,815,414	2
	98n	0	0	0	61,206	76,299	0	39,841	177,346	0
	99o	340,364	0	1,844,591	1,028,462	924,753	133,150	814,620	5,085,940	751
	99n	0	0	0	46,358	3,239,971	61,976	21,540	3,369,845	0
Allylamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	360	0	991	1,351	0
	98n	0	0	0	5	20	0	0	25	0
	99o	0	0	0	0	4,000	0	1,274	5,274	0
	99n	0	0	0	1	0	0	0	1	0
Allyl chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	520,000	0	186,000	1,756	750,979	412,357	52,568	1,923,660	65
	98o	780,000	68,000	5,349,016	321,228	243,860	194,934	70,054	7,027,092	1
	98n	0	0	0	0	127,076	282	955	128,313	0
	99o	23,000	44,000	157,078	236,934	301,187	648,363	78,649	1,489,211	1,001
	99n	0	0	0	0	192,972	1,090	12,967	207,029	0
* Aluminum (fume or dust)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	15,378,165	24,327,521	0	164,604	15,628,491	332,192	8,051,958	63,882,931	714
	98o	15,726,178	29,635,638	0	4,267	18,287,637	176,034	9,868,341	73,698,095	29,317
	98n	0	210,000	0	0	226,635	550	3,781,933	4,219,118	10,984
	99o	15,508,535	28,604,288	0	5,058	21,798,263	425,726	19,199,937	85,541,807	25
	99n	1,013,539	0	0	0	289,500	127,156	4,320,550	5,750,745	1
Aluminum oxide (fibrous forms)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	25,100	15,627	0	9,991	21,448	2,986,600	2,315,726	5,374,492	7
	98o	7,716,545	254,780	0	0	0	1,147,081	2,000,733	11,119,139	3
	98n	102,013	12,691	0	13,033	46,453	552,561	15,725,611	16,452,362	0
	99o	12,612,150	496,257	0	1,111	217	845,798	1,910,982	15,866,515	1
	99n	4	1,731	0	0	909,390	1,205,831	30,944,181	33,061,137	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
20859-73-8 *	Aluminum phosphide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	2	4	0	0	0	4	153	157
834-12-8 *	Ametryn	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	836	83	0	5	924	250	1,174
		98o	5	1,168	51	0	0	1,219	0	1,219
		98n	No reports							
		99o	4	1,460	16	0	0	1,476	0	1,476
		99n	No reports							
60-09-3 **	4-Aminoazobenzene	88	1	0	0	537	0	537	0	537
		95	1	0	0	64	0	64	0	64
		98o	2	0	0	124	0	124	0	124
		98n	No reports							
		99o	2	0	0	287	0	287	0	287
		99n	No reports							
92-67-1 **	4-Aminobiphenyl	88	1	10	0	4	0	14	0	14
		95	1	0	0	2	0	2	0	2
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	13	0	13	0	13
		99n	No reports							
33089-61-1 *	Amitraz	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
61-82-5 **	Amitrole	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	2	1	0	0	0	1	0	1
		99o	No reports							
		99n	3	7	1	0	0	8	168	176
7664-41-7 *	Ammonia	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2,940	159,200,954	9,320,538	23,959,031	5,588,138	198,068,661	1,600,225	199,668,886
		98o	2,726	153,291,641	7,383,797	25,647,620	3,268,821	189,591,879	2,017,531	191,609,410
		98n	262	5,756,672	364,668	502,580	1,339,588	7,963,508	29,639	7,993,147
		99o	2,610	144,234,446	7,649,385	25,635,785	2,871,729	180,391,345	3,106,589	183,497,934
		99n	249	6,666,922	268,326	610,000	3,781,015	11,326,263	221,689	11,547,952

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Aluminum phosphide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	66,262	0	28,100	94,362	0
* Ametryn	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	108,500	12,502	256	121,258	1
	98o	25	0	0	0	120,083	85,000	592	205,700	0
	98n	No reports								
	99o	25	0	0	0	46,079	12,000	801	58,905	0
	99n	No reports								
** 4-Aminoazobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	3	0	64	67	0
	98o	0	0	0	0	0	74	124	198	0
	98n	No reports								
	99o	0	0	0	0	0	67	287	354	0
	99n	No reports								
** 4-Aminobiphenyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	91,000	0	2	91,002	0
	98o	0	0	0	0	98,000	810	0	98,810	0
	98n	No reports								
	99o	0	0	0	0	124,926	48	13	124,987	0
	99n	No reports								
* Amitraz	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
*** Amitrole	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	22,788	0	1	22,789	0
	99o	No reports								
	99n	0	0	0	0	205,239	0	170	205,409	0
* Ammonia	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	190,464,294	12,036,036	43,263,891	112,865	308,699,468	18,737,292	198,317,491	771,631,337	1,096,464
	98o	342,121,789	10,214,289	103,213,049	150,020	271,591,316	17,260,247	196,040,261	940,590,971	515,621
	98n	7,858,375	1,883	0	97,656	5,093,107	91,284	7,900,197	21,042,502	61,159
	99o	208,384,055	7,750,820	89,129,210	134,609	306,220,697	16,191,460	185,216,055	813,026,906	517,454
	99n	7,480,382	368	0	9,769	6,261,581	173,273	11,526,954	25,452,327	1,639

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
62-53-3 *	Aniline	88	68	712,769	16,105	3,582,975	12,822	4,324,671	346,206	4,670,877
		95	67	200,799	8,943	1,221,381	4,193	1,435,316	21,600	1,456,916
		98o	69	216,517	19,549	1,076,445	252	1,312,763	25,401	1,338,164
		98n	12	696	0	85,466	0	86,162	1,479	87,641
		99o	70	176,497	15,782	533,803	1,013	727,095	55,479	782,574
		99n	10	302	1	0	0	303	344	647
90-04-0 **	o-Anisidine	88	6	2,293	285	0	250	2,828	3	2,831
		95	7	1,031	74	0	0	1,105	3	1,108
		98o	7	1,373	39	0	0	1,412	2	1,414
		98n	No reports							
		99o	7	1,587	14	0	0	1,601	1	1,602
		99n	No reports							
104-94-9	p-Anisidine	88	2	10	250	0	250	510	0	510
		95	2	5	0	0	0	5	0	5
		98o	1	45	0	0	0	45	0	45
		98n	No reports							
		99o	No reports							
		99n	No reports							
120-12-7	Anthracene	88	139	199,823	4,382	0	10,905	215,110	204,665	419,775
		95	70	81,471	4,943	0	939	87,353	48,140	135,493
		98o	69	56,059	580	0	3,564	60,203	69,966	130,169
		98n	3	15	0	0	0	15	0	15
		99o	67	75,827	515	0	3,185	79,527	65,057	144,584
		99n	4	303	0	0	166,319	166,622	7,172	173,794
7440-36-0	Antimony	88	152	69,916	11,114	2,100	903,916	987,046	625,682	1,612,728
		95	134	34,310	6,592	0	18,786	59,688	122,755	182,443
		98o	118	7,015	14,471	0	30,542	52,028	321,459	373,487
		98n	11	78	47	18,994	1,226,450	1,245,569	72,946	1,318,515
		99o	122	9,106	13,411	0	56,885	79,402	331,101	410,503
		99n	6	93	0	0	715,803	715,896	19,118	735,014
--	Antimony compounds	88	272	166,290	31,178	9,200	1,935,018	2,141,686	2,281,080	4,422,766
		95	561	105,476	33,705	11,332	1,598,569	1,749,082	3,425,678	5,174,760
		98o	588	73,626	33,435	11,298	1,242,642	1,361,001	3,524,101	4,885,102
		98n	57	11,794	22,136	170,062	23,472,944	23,676,936	179,968	23,856,904
		99o	581	116,799	31,374	62,911	980,943	1,192,027	3,034,587	4,226,614
		99n	62	14,064	31,354	610,086	27,110,578	27,766,082	373,803	28,139,885
7440-38-2 **	Arsenic	88	78	7,687	1,282	0	181,267	190,236	65,342	255,578
		95	94	7,121	368	0	27,356	34,845	81,878	116,723
		98o	50	16,672	533	0	5,065	22,270	117,860	140,130
		98n	35	40,200	1,334	269,393	76,489,637	76,800,564	194,051	76,994,615
		99o	54	1,257	547	0	76,294	78,098	99,163	177,261
		99n	24	5,547	505	250	35,645,402	35,651,704	393,702	36,045,406

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production- related Waste Managed Pounds	Non-production- related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Aniline	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	7,243,251	0	7,419,516	354,598	3,749,706	1,258,936	1,455,266	21,481,273	1,148
	98o	7,549,987	2	8,579,301	2,940,299	3,611,723	3,537,666	1,358,868	27,577,846	6,698
	98n	0	0	0	17,825	837,519	305,538	86,786	1,247,668	0
	99o	9,876,710	0	7,785,942	2,307,087	3,248,988	3,625,271	769,364	27,613,362	8,993
	99n	0	0	0	57,303	638,618	0	136	696,057	0
** o-Anisidine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	143	0	14,704	5,100	1,061	21,008	0
	98o	0	0	2,756	0	991	5,176	1,413	10,336	0
	98n	No reports								
	99o	0	0	2,398	0	376	7,083	1,602	11,459	0
	99n	No reports								
p-Anisidine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	9	9	18	0
	98o	0	0	0	0	61	0	45	106	0
	98n	No reports								
	99o	No reports								
	99n	No reports								
Anthracene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	176,705	20,744	183,121	200,541	1,693,357	5,084	115,722	2,395,274	34,354
	98o	244,557	33,782	333,554	97,248	100,138	63,167	130,316	1,002,762	2
	98n	0	0	0	0	4,354	37	8	4,399	1
	99o	599,528	30,256	237,242	162,322	78,457	25,067	148,881	1,281,753	3
	99n	0	0	0	0	228,324	215	173,562	402,101	0
Antimony	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	3,831,021	5,483,416	0	1,730	818,680	95,864	127,061	10,357,772	463
	98o	4,625,143	727,639	30,405	66,692	308,925	52,241	340,759	6,151,804	12
	98n	0	0	0	0	0	38,018	1,284,899	1,322,917	1
	99o	5,276,182	1,167,889	0	0	351,900	108,459	289,408	7,193,838	13
	99n	0	0	0	0	0	0	734,829	734,829	0
Antimony compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,373,201	3,311,424	0	50,997	79,188	939,909	4,047,038	13,801,757	27,841
	98o	4,885,114	3,998,003	6,820	16,879	566,509	503,989	4,533,424	14,510,738	142,994
	98n	10,441	0	0	0	16,484	8	23,852,433	23,879,366	159
	99o	5,050,525	3,858,336	0	53,103	470,311	521,640	3,679,812	13,633,727	213,256
	99n	11,713	14,752	0	0	0	470	27,836,527	27,863,462	300,004
** Arsenic	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,072,279	162,386	7,700	496	13,030	45,969	66,757	1,368,617	749
	98o	3,403,468	205,974	0	0	64,685	3,058	223,391	3,900,576	2,534
	98n	542,954	0	0	0	60,800	17,033	76,970,133	77,590,920	6
	99o	1,502,341	567,744	0	0	74,034	3,652	183,470	2,331,241	1,172
	99n	0	142,814	0	0	0	111,931	36,300,636	36,555,381	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On-site Releases	Transfers Off-site to Disposal	
				Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	
—	Arsenic compounds	88	274	268,528	6,243	27,400	4,946,184	5,248,355	1,407,110	6,655,465
		95	305	83,604	4,825	55,000	1,723,347	1,866,776	1,556,589	3,423,365
		98o	347	106,913	5,628	173,100	7,126,553	7,412,194	681,955	8,094,149
		98n	205	200,500	159,881	760,075	549,575,334	550,695,790	1,458,492	552,154,282
		99o	324	91,617	15,584	198,310	9,278,202	9,583,713	1,974,759	11,558,472
		99n	197	199,876	168,073	880,034	555,749,965	556,997,948	1,593,746	558,591,694
1332-21-4	*** Asbestos (friable)	88	146	48,496	10,699	0	2,111,880	2,171,075	12,135,707	14,306,782
		95	74	5,950	1	0	131,404	137,355	4,860,165	4,997,520
		98o	66	2,563	1	0	610,368	612,932	8,319,951	8,932,883
		98n	15	138	0	0	13,527,501	13,527,639	155,028	13,682,667
		99o	74	3,389	0	0	326,186	329,575	4,843,382	5,172,957
		99n	13	43	0	0	13,247,597	13,247,640	1	13,247,641
1912-24-9	* Atrazine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	20	22,689	1,656	0	637,036	661,381	101,631	763,012
		98o	23	30,971	2,756	336	554,456	588,519	15,780	604,299
		98n	5	12	0	0	73,687	73,699	3,690	77,389
		99o	23	20,915	1,212	172	599,739	622,038	22,795	644,833
		99n	5	31	0	0	44,173	44,204	133	44,337
7440-39-3	Barium	88	142	266,811	18,650	0	6,721,686	7,007,147	1,883,903	8,891,050
		95	77	175,350	6,279	0	227,523	409,152	492,999	902,151
		98o	70	54,419	7,807	0	285,353	347,579	447,682	795,261
		98n	58	198,123	141,206	25,000	9,299,213	9,663,542	1,358,670	11,022,212
		99o	68	79,390	2,157	0	501,295	582,842	820,282	1,403,124
		99n	44	181,781	55,281	24,153	5,459,880	5,721,095	1,831,394	7,552,489
—	Barium compounds	88	629	1,027,722	104,302	2,773	5,791,655	6,926,452	17,532,268	24,458,720
		95	592	373,750	108,121	83,000	1,707,447	2,272,318	6,544,688	8,817,006
		98o	699	803,592	1,096,433	35,400	6,913,852	8,849,277	6,089,036	14,938,313
		98n	443	2,218,734	1,003,832	1,286,250	169,589,111	174,097,927	37,843,055	211,940,982
		99o	679	850,760	1,120,204	268	6,070,833	8,042,065	6,867,428	14,909,493
		99n	438	2,223,524	1,062,123	1,982,650	245,824,805	251,093,102	35,831,029	286,924,131
22781-23-3	* Bendiocarb	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	555	0	0	0	555	0	555
		98o	3	2	0	0	0	2	0	2
		98n	1	3	0	0	0	3	10	13
		99o	3	5	0	0	0	5	0	5
		99n	1	11	0	0	0	11	10	21
1861-40-1	* Benfluralin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	8	2,977	0	0	0	2,977	14,000	16,977
		98o	8	1,564	0	0	0	1,564	3	1,567
		98n	No reports							
		99o	9	1,231	0	0	0	1,231	5	1,236
		98n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Arsenic compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,446,334	300,321	0	231	227,628	1,302,233	2,883,568	7,160,315	93,392
	98o	2,534,030	858,825	0	0	68,912	121,938	7,033,868	10,617,573	2,154,034
	98n	58,677	12	0	1	43,270	7,039	552,256,545	552,365,544	43
	99o	3,529,653	1,087,793	300	0	78,979	202,247	7,917,170	12,816,142	2,438,639
	99n	65,746	351	0	0	0	474	559,062,571	559,129,142	5,200,019
*,** Asbestos (friable)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	398,800	0	0	0	1,548,870	1,102	4,280,979	6,229,751	176,200
	98o	375,107	150	0	0	1,207,292	362	6,740,866	8,323,777	2,206,599
	98n	0	0	0	0	0	0	13,527,516	13,527,516	3
	99o	251,379	145	0	0	606,068	29,132	3,437,254	4,323,978	389,333
	99n	0	0	0	0	0	0	13,300,010	13,300,010	0
* Atrazine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	73	0	0	0	556,057	180,643	685,144	1,421,917	17,002
	98o	250	0	0	0	654,669	213,479	612,381	1,480,779	254
	98n	0	0	0	0	268,583	10	77,389	345,982	0
	99o	2,250	0	0	0	510,071	190,895	679,522	1,382,738	252
	99n	0	0	0	0	146,907	10	44,337	191,254	0
Barium	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	14,719	448,944	0	102	43,195	37,552	774,572	1,319,084	5
	98o	159,389	413,535	601,788	418	399,046	120,846	1,012,348	2,707,370	652
	98n	4,992	437,318	0	0	376,908	289,982	10,731,478	11,840,678	10
	99o	164,889	70,441	0	0	34,104	105,417	1,614,604	1,989,455	6
	99n	28,292	819,285	0	0	1,177,015	167,327	6,778,677	8,970,596	17
Barium compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	26,521,724	2,173,955	200	66,358	6,364,467	3,498,239	8,131,099	46,756,042	33,069
	98o	35,285,575	6,231,998	19,138	90,616	5,780,159	809,953	15,024,115	63,241,554	540
	98n	569,437	794,202	0	34,332	435,153	199,747	211,215,186	213,248,057	24,198
	99o	52,052,240	2,646,444	6,000	139,668	5,021,774	693,028	16,717,428	77,276,582	14,167
	99n	553,901	2,212,564	0	0	37,315	219,843	288,206,503	291,230,126	11,304
* Bendiocarb	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	560	0	0	0	0	0	560	1,120	0
	98o	0	0	0	0	0	580	0	580	0
	98n	0	0	0	0	0	0	30	30	0
	99o	0	0	0	0	0	581	0	581	0
	99n	0	0	0	0	56,392	0	11	56,403	0
* Benfluralin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,205	0	0	0	6,200	175	16,910	27,490	4
	98o	79,000	0	0	0	31	897	1,347	81,275	1
	98n	No reports								
	99o	87,000	0	0	0	0	335	1,223	88,558	0
	98n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
17804-35-2 *	Benomyl	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	0	0	0	0	0	0
		98o	3	1	0	0	0	1	0	1
		98n	1	10	0	0	0	10	5	15
		99o	3	7	0	0	0	7	0	7
		99n	2	0	0	0	0	0	254	254
98-87-3	Benzal chloride	88	3	5,258	0	0	0	5,258	7,308	12,566
		95	4	1,112	0	0	0	1,112	0	1,112
		98o	3	398	0	0	0	398	0	398
		98n	3	20	0	0	0	20	0	20
		99o	3	387	0	0	0	387	0	387
		99n	1	23	0	0	0	23	22	45
55-21-0	Benzamide	88	1	500	250	250	0	1,000	750	1,750
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	No reports							
71-43-2 **	Benzene	88	484	32,341,184	46,732	825,035	126,728	33,339,679	396,880	33,736,559
		95	476	9,410,086	21,290	282,642	18,583	9,732,601	71,391	9,803,992
		98o	484	7,239,578	15,070	504,109	237,544	7,996,301	130,443	8,126,744
		98n	523	362,733	3,943	71,697	2,727	441,100	67,440	508,540
		99o	487	7,287,778	13,647	617,825	18,732	7,937,982	71,349	8,009,331
		99n	490	353,408	14,291	222,803	555,127	1,145,629	71,868	1,217,497
92-87-5	Benzidine	88	No reports							
		95	No reports							
		98o	No reports							
		98n	4	38	0	0	0	38	0	38
		99o	2	7	0	0	0	7	0	7
		99n	4	6	0	0	0	6	165	171
98-07-7 **	Benzoic trichloride	88	4	24,963	0	0	0	24,963	9,777	34,740
		95	7	6,496	0	0	0	6,496	250	6,746
		98o	6	2,253	0	0	0	2,253	330	2,583
		98n	2	2	0	0	0	2	110	112
		99o	6	2,175	0	0	0	2,175	400	2,575
		99n	4	9	0	0	0	9	172	181
98-88-4	Benzoyl chloride	88	22	33,014	0	130,000	250	163,264	2,399	165,663
		95	22	16,749	0	0	0	16,749	1,460	18,209
		98o	25	11,905	0	0	0	11,905	0	11,905
		98n	1	88	0	0	0	88	3,980	4,068
		99o	22	10,351	0	0	0	10,351	0	10,351
		99n	2	74	0	0	0	74	2,393	2,467

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Benomyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	482,000	122,000	0	604,000	0
	98o	0	0	45,000	65,600	20,200	20,263	1	151,064	0
	98n	0	0	0	0	95,374	0	20	95,394	0
	99o	0	0	0	107,108	13,757	16,128	7	137,000	0
	99n	0	0	0	0	31,995	0	16	32,011	0
Benzal chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	260,000	2,800	0	1,105	263,905	0
	98o	0	0	0	120,000	84,000	200	400	204,600	0
	98n	0	0	0	0	235,247	0	20	235,267	0
	99o	0	0	0	550,000	83,000	74	388	633,462	0
	99n	0	0	0	0	676,990	0	45	677,035	0
Benzamide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
*,** Benzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	47,987,022	420,034	20,222,877	1,579,955	54,065,446	1,974,430	9,795,515	136,045,279	65,962
	98o	36,113,609	640,449	16,882,843	1,086,608	47,608,948	3,810,819	8,133,354	114,276,630	51,769
	98n	962,014	502,057	569,513	8,432,613	3,913,360	304,222	912,873	15,596,652	35,039
	99o	36,876,512	616,713	24,765,316	1,124,480	48,417,541	3,247,161	8,021,586	123,069,309	67,208
	99n	2,304,682	56,328	619,481	1,494,490	5,573,726	971,250	698,228	11,718,185	23,414
Benzidine	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	101,123	58	34	101,215	1
	99o	0	0	89,000	0	5,538	60	2	94,600	1
	99n	0	0	0	0	311,452	0	169	311,621	0
** Benzoic trichloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	3,001	150,000	32	6,242	159,275	0
	98o	0	0	0	20,000	160,000	34,870	2,557	217,427	0
	98n	0	0	0	0	15,768	0	112	15,880	0
	99o	0	0	0	20,000	110,000	1,608	2,572	134,180	0
	99n	0	0	0	0	176,025	0	178	176,203	0
Benzoyl chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	80	1,676,545	615,127	18,213	2,309,965	0
	98o	0	0	0	0	2,011,461	498,362	11,903	2,521,726	0
	98n	0	0	0	0	570,508	0	4,068	574,576	0
	99o	0	0	0	0	2,370,374	336,441	10,370	2,717,185	1
	99n	0	0	0	0	504,005	0	2,469	506,474	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
94-36-0 *	Benzoyl peroxide	88	50	6,294	0	5,350	36,050	47,694	23,954	71,648
		95	64	2,043	255	0	10,345	12,643	4,760	17,403
		98o	59	803	250	0	736	1,789	6,046	7,835
		98n	4	0	0	0	0	0	0	0
		99o	58	251	250	0	117	618	5,423	6,041
		99n	2	0	0	0	0	0	2	2
100-44-7	Benzyl chloride	88	51	43,329	640	0	500	44,469	9,687	54,156
		95	48	19,664	40	0	247	19,951	3,870	23,821
		98o	45	26,888	347	150	261	27,646	4,506	32,152
		98n	3	41	250	0	0	291	1	292
		99o	38	26,278	1,207	270	214	27,969	1,260	29,229
		99n	6	23	1	0	0	24	177	201
7440-41-7 **	Beryllium	88	12	2,763	74	0	37,000	39,837	3,160	42,997
		95	10	1,087	31	0	21,255	22,373	7,595	29,968
		98o	14	799	26	0	57,818	58,643	20,404	79,047
		98n	5	0	0	0	0	0	0	0
		99o	15	769	57	0	53,271	54,097	20,081	74,178
		99n	7	0	0	0	0	0	0	0
—	** Beryllium compounds	88	5	862	17	0	12,000	12,879	8,261	21,140
		95	7	360	2	0	23,000	23,362	2,391	25,753
		98o	8	383	6	0	0	389	6,754	7,143
		98n	53	20,999	1,859	0	733,229	756,087	91,333	847,420
		99o	16	473	27	4,100	19	4,619	5,028	9,647
		99n	57	7,343	3,483	0	822,928	833,754	49,840	883,594
82657-04-3 *	Bifenthrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	10	0	0	5	15	0	15
		98o	5	760	5	0	0	765	0	765
		98n	1	0	0	0	0	0	19	19
		99o	5	546	0	0	0	546	0	546
		99n	No reports							
92-52-4 *	Biphenyl	88	181	1,211,292	88,197	82,760	222,297	1,604,546	227,492	1,832,038
		95	136	744,993	6,242	30,337	71,864	853,436	38,088	891,524
		98o	122	536,524	4,105	29,574	1,159	571,362	49,880	621,242
		98n	10	36	0	0	0	36	55	91
		99o	124	675,326	8,949	4,177	24	688,476	56,857	745,333
		99n	10	3,348	0	0	2	3,350	2,615	5,965
111-91-1	Bis(2-chloroethoxy)-methane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	12,510	0	250	0	12,760	0	12,760
		98o	1	1,434	0	930	1,024	3,388	0	3,388
		98n	1	0	0	0	0	0	0	0
		99o	1	1,312	0	3,697	0	5,009	0	5,009
		99n	1	2	1	0	0	3	4	7

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Benzoyl peroxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,600	10,800	863	1,520	57,214	42,461	16,769	134,227	1
	98o	10,364	0	0	1,191	86,629	49,139	8,972	156,295	0
	98n	0	0	0	0	12,360	0	0	12,360	0
	99o	6,935	0	0	1,885	124,112	91,458	6,476	230,866	3
	99n	0	0	0	0	15,291	0	2	15,293	0
Benzyl chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,000	0	25,481	430,300	256,947	11,027	21,421	746,176	81
	98o	4,800	0	17,000	420,878	250,910	76,610	31,360	801,558	2
	98n	0	0	0	0	483,947	0	66	484,013	0
	99o	0	0	0	392,457	169,516	37,127	28,550	627,650	1
	99n	0	0	0	0	678,251	0	198	678,449	0
** Beryllium	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	39,689	19,263	0	0	780	423	27,369	87,524	0
	98o	160,399	84,146	0	0	10	8	63,356	307,919	1
	98n	0	0	0	0	0	0	0	0	0
	99o	101,065	24,154	0	0	0	966	66,436	192,621	0
	99n	0	0	0	0	0	0	0	0	0
**	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	7	23,880	0	0	0	1,011	24,661	49,559	0
	98o	0	26,450	0	0	0	1,090	1,833	29,373	1
	98n	9,700	0	0	0	194	0	846,933	856,827	308
	99o	0	38,384	0	0	0	1,349	8,089	47,822	2
	99n	9,700	0	0	0	0	0	898,112	907,812	9
* Bifenthrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	10	10	20	0
	98o	0	0	0	0	0	402	230	632	0
	98n	0	0	0	0	11,275	0	19	11,294	0
	99o	0	0	0	0	1	2,069	71	2,141	0
	99n	No reports								
* Biphenyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	268,053	156,081	1,088,381	346,055	963,993	615,716	904,745	4,343,024	11,639
	98o	306,564	260,334	1,209,699	131,946	495,349	764,962	626,662	3,795,516	3,939
	98n	0	0	0	12,840	279,525	263	89	292,717	0
	99o	446,648	245,973	2,098,273	150,054	663,883	610,722	764,610	4,980,163	4,190
	99n	0	0	0	42,583	711,018	2,824	3,152	759,577	5
Bis(2-chloroethoxy)-methane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	12,796	12,796	0
	98o	0	0	0	0	0	15	3,388	3,403	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	0	0	5,009	5,009	0
	99n	0	0	0	0	28,000	0	2	28,002	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
111-44-4 *	Bis(2-chloroethyl) ether	88	8	4,922	1,351	0	0	6,273	0	6,273
		95	11	564	3	0	0	567	0	567
		98o	11	844	4	0	0	848	1	849
		98n	3	0	0	0	0	0	0	0
		99o	12	353	23	0	0	376	296	672
		99n	3	11	1	0	0	12	17	29
542-88-1 **	Bis(chloromethyl) ether	88	2	1	0	0	0	1	0	1
		95	2	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	2	4	0	0	0	4	153	157
108-60-1	Bis(2-chloro-1-methylethyl) ether	88	2	7,959	30,000	0	0	37,959	0	37,959
		95	2	6,130	0	0	0	6,130	0	6,130
		98o	2	3,360	46	0	2	3,408	0	3,408
		98n	No reports							
		99o	2	4,110	2	0	2	4,114	0	4,114
		99n	No reports							
56-35-9 *	Bis(tributyltin) oxide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	32	0	0	32	13,873	13,905
		98o	3	0	6	0	2	8	3,372	3,380
		98n	No reports							
		99o	5	10	6	0	1	17	3,923	3,940
		99n	No reports							
10294-34-5	Boron trichloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	5	0	0	0	5	0	5
		98o	5	750	0	0	0	750	0	750
		98n	No reports							
		99o	7	350	0	0	0	350	0	350
		99n	No reports							
7637-07-2	Boron trifluoride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	24	25,019	0	0	0	25,019	929	25,948
		98o	23	38,142	5	0	0	38,147	0	38,147
		98n	No reports							
		99o	23	16,722	0	0	0	16,722	0	16,722
		99n	No reports							
314-40-9 *	Bromacil	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	500	27,897	0	0	28,397	0	28,397
		98o	1	10	0	0	0	10	0	10
		98n	1	25	0	0	0	25	0	25
		99o	1	10	0	0	0	10	0	10
		99n	1	0	0	0	0	0	0	0

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Bis(2-chloroethyl) ether	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	146,118	302,700	203,775	0	88,893	570	742,056	0
	98o	0	159,909	426,404	9,541	540,375	349,619	853	1,486,701	0
	98n	0	0	0	0	10,234	0	0	10,234	0
	99o	0	142,932	1,280,773	6,127	1,627,378	455,565	384	3,513,159	0
	99n	0	0	0	0	215,220	0	26	215,246	0
** Bis(chloromethyl) ether	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	13,000	0	0	13,000	0
	98o	0	0	0	0	36,500	0	0	36,500	0
	98n	No reports								
	99o	0	0	0	0	34,000	0	0	34,000	0
	99n	0	0	0	0	111,933	0	157	112,090	0
Bis(2-chloro-1-methylethyl) ether	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,200,000	0	8,540,000	0	10,840,000	0	6,100	24,586,100	1
	98o	8,900,000	0	6,000,000	0	1,410,000	0	3,500	16,313,500	0
	98n	No reports								
	99o	2,800,000	0	7,210,000	0	5,149,000	0	4,100	15,163,100	0
	99n	No reports								
* Bis(tributyltin) oxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	39,840	0	0	336	0	13,903	54,079	0
	98o	0	58,478	0	0	336	0	3,380	62,194	0
	98n	No reports								
	99o	0	35,864	0	0	346	530	4,367	41,107	1
	99n	No reports								
Boron trichloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,000	0	0	0	200	0	1	5,201	0
	98o	6,700	0	0	0	53,000	0	335	60,035	2
	98n	No reports								
	99o	9,100	0	0	0	16,000	10,000	145	35,245	0
	99n	No reports								
Boron trifluoride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	425,701	1,027	24,369	451,097	191
	98o	0	0	0	35	462,635	15,255	35,396	513,321	449
	98n	No reports								
	99o	0	0	0	0	509,864	1,130	16,452	527,446	181
	99n	No reports								
* Bromacil	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5	0	0	0	30,687	27,829	27,947	86,468	0
	98o	0	0	0	0	0	0	1,192	1,192	0
	98n	0	0	0	0	32,434	0	25	32,459	0
	99o	0	0	0	0	0	0	850	850	0
	99n	0	0	0	0	17,343	0	0	17,343	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
7726-95-6	* Bromine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	46	112,466	880	7	10	113,363	250	113,613
		98o	52	104,083	7,110	7	7,705	118,905	3	118,908
		98n	4	84	0	0	0	84	2	86
		99o	48	235,390	15	0	7,705	243,110	30,508	273,618
		99n	2	33	0	0	0	33	7,360	7,393
35691-65-7	* 1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	4	0	0	0	0	0	0	0
		99n	No reports							
353-59-3	Bromochlorodifluoromethane (Halon 1211)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	4,811	0	0	0	4,811	0	4,811
		98o	4	3,673	0	0	0	3,673	0	3,673
		98n	No reports							
		99o	4	3,979	0	0	0	3,979	0	3,979
		99n	No reports							
75-25-2	Bromoform	88	2	0	8,600	0	0	8,600	0	8,600
		95	No reports							
		98o	No reports							
		98n	3	3	0	0	0	3	0	3
		99o	1	5	0	0	0	5	0	5
		99n	1	2	1	0	0	3	4	7
74-83-9	* Bromomethane	88	36	2,784,795	0	1,546	0	2,786,341	0	2,786,341
		95	43	2,601,734	14	3,817	0	2,605,565	0	2,605,565
		98o	45	1,565,087	30	230	11	1,565,358	0	1,565,358
		98n	2	5	0	0	0	5	0	5
		99o	43	1,428,722	29	0	4	1,428,755	1,603	1,430,358
		99n	3	186	0	0	0	186	0	186
75-63-8	Bromotrifluoromethane (Halon 1301)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	8	33,632	0	0	0	33,632	0	33,632
		98o	6	26,842	0	0	0	26,842	0	26,842
		98n	No reports							
		99o	6	30,825	0	0	0	30,825	0	30,825
		99n	No reports							
1689-84-5	* Bromoxynil	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	6	0	0	0	6	990	996
		98o	2	506	0	0	0	506	1,483	1,989
		98n	No reports							
		99o	3	3	0	0	0	3	790	793
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Bromine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,960,000	740	0	0	14,808,669	283,435	112,386	20,165,230	29
	98o	5,670,000	230	0	0	18,611,926	20,781	121,933	24,424,870	196
	98n	0	0	0	162,356	12,791	0	86	175,233	1
	99o	130,800	430	0	0	850,764	483,028	241,997	1,707,019	800
	99n	0	2,991	0	0	11,373	0	7,393	21,757	0
* 1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	10,957	0	10,957	0
	98o	0	0	0	0	11,000	9,824	0	20,824	0
	98n	No reports								
	99o	0	0	0	0	0	9,595	0	9,595	0
	99n	No reports								
Bromochlorodifluoromethane (Halon 1211)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	282,800	0	0	0	0	0	4,832	287,632	2
	98o	501,947	0	0	0	0	0	3,673	505,620	175
	98n	No reports								
	99o	485,900	0	0	0	0	0	3,827	489,727	152
	99n	No reports								
Bromoform	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	10,594	2	3	10,599	1
	99o	0	0	0	0	216	2	1	219	1
	99n	0	0	0	0	18,000	0	1	18,001	0
* Bromomethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	165,182	0	101,000	380	4,876,073	0	2,578,001	7,720,636	5
	98o	12,780	0	222,300	280	488,585	0	1,561,574	2,285,519	14,071
	98n	0	0	0	0	3,007	30	1	3,038	1
	99o	295,500	0	273,800	160	947,126	2,455	1,343,242	2,862,283	15,333
	99n	0	0	0	0	178,475	0	187	178,662	0
Bromotrifluoromethane (Halon 1301)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	200,661	0	0	0	0	0	36,155	236,816	806
	98o	583,803	0	0	0	0	0	26,592	610,395	6,468
	98n	No reports								
	99o	647,796	0	0	0	0	0	29,446	677,242	1,630
	99n	No reports								
* Bromoxynil	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	996	996	0
	98o	0	0	0	0	0	0	1,244	1,244	0
	98n	No reports								
	99o	0	0	0	0	0	0	790	790	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	
1689-99-2 *	Bromoxynil octanoate	88	NR	NR	NR	NR	NR	NR	NR
		95	4	500	0	0	0	500	14,069
		98o	5	1,566	0	0	0	1,566	15,986
		98n	No reports						
		99o	6	519	0	0	0	519	9,445
		99n	No reports						
357-57-3	Brucine	88	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0
		98n	No reports						
		99o	No reports						
		99n	2	4	0	0	0	4	153
106-99-0 **	1,3-Butadiene	88	157	7,004,622	522,504	1,500	7,817	7,536,443	185,398
		95	186	3,050,945	5,393	0	277	3,056,615	4,892
		98o	189	2,741,685	8,834	732	7,998	2,759,249	2,067
		98n	6	1,035	0	0	0	1,035	500
		99o	190	1,909,518	1,900	720	127	1,912,265	2,066
		99n	4	2,178	0	0	0	2,178	505
141-32-2	Butyl acrylate	88	166	411,862	3,528	0	602	415,992	18,766
		95	164	230,275	2,919	0	559	233,753	73,591
		98o	158	206,776	7,790	0	546	215,112	25,473
		98n	12	6,009	0	0	0	6,009	22,581
		99o	157	241,981	8,747	156	546	251,430	31,763
		99n	12	3,031	0	0	0	3,031	445
71-36-3	n-Butyl alcohol	88	1,109	37,715,221	128,130	3,006,660	175,819	41,025,830	924,519
		95	1,125	26,124,368	115,353	2,263,357	4,631	28,507,709	290,886
		98o	1,027	21,606,870	94,523	3,169,538	5,209	24,876,140	382,843
		98n	180	27,573	0	61,068	370	89,011	16,075
		99o	971	21,015,396	56,286	3,097,813	3,226	24,172,721	647,251
		99n	171	31,534	1	91,230	1,400	124,165	76,715
78-92-2 *	sec-Butyl alcohol	88	92	1,097,163	122,291	0	2,600	1,222,054	21,351
		95	115	908,143	6,782	136,172	2,805	1,053,902	18,376
		98o	116	971,834	3,950	169,243	7	1,145,034	16,535
		98n	36	2,531	0	0	13,000	15,531	50
		99o	108	864,240	11,020	145,995	5	1,021,260	16,931
		99n	38	2,976	0	0	13,000	15,976	505
75-65-0 *	tert-Butyl alcohol	88	54	1,574,137	14,989	674,798	818	2,264,742	56,502
		95	91	657,818	20,183	1,082,071	751	1,760,823	30,783
		98o	84	420,564	30,330	861,956	7,352	1,320,202	178,217
		98n	26	25,804	21	0	1,092	26,917	4,029
		99o	82	366,121	15,354	770,634	751	1,152,860	76,468
		99n	33	31,061	260	0	5	31,326	1,813

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Bromoxynil octanoate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	173	13,689	13,862	0
	98o	0	0	0	0	0	40	21,215	21,255	0
	98n	No reports								
	99o	0	0	0	0	0	397	13,525	13,922	0
	99n	No reports								
Brucine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	1
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	94,553	0	157	94,710	0
** 1,3-Butadiene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,513,939	13,652,736	31,663,920	34,519	58,474,775	96,310	2,879,808	112,316,007	200,548
	98o	5,428,029	15,574,853	15,171,040	260,947	53,274,984	3,918,622	2,724,665	96,353,140	776,818
	98n	0	0	0	218,662	130,866	9,120	1,035	359,683	1
	99o	5,566,810	11,539,016	15,618,413	433,581	62,997,080	307,699	1,912,694	98,375,293	59,754
	99n	0	0	0	27,320	232,521	1,620	2,068	263,529	0
Butyl acrylate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	173,995	207,325	4,059,471	1,143,139	4,174,080	228,382	301,235	10,287,627	5,271
	98o	270,060	950	3,912,299	932,014	11,726,284	87,681	225,309	17,154,597	6,129
	98n	0	0	0	91,548	178,664	261	7,554	278,027	2
	99o	330,066	1,466	3,045,794	600,039	2,691,295	178,128	265,758	7,112,546	1,408
	99n	0	0	12,753	61,497	237,812	3,797	3,218	319,077	16
n-Butyl alcohol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	8,438,990	3,351,225	24,665,663	8,572,532	38,018,327	3,346,692	28,870,500	115,263,929	52,341
	98o	8,306,964	2,608,611	29,189,033	8,360,639	42,906,842	5,218,604	25,588,497	122,179,190	58,888
	98n	1,704,649	8,376	32,154	9,817,765	1,739,894	963,207	94,668	14,360,713	23
	99o	9,132,073	2,250,267	33,288,202	8,396,622	32,557,149	4,666,674	24,995,850	115,286,837	11,269
	99n	2,619,863	7,646	37,137	4,621,141	2,708,082	1,192,341	127,721	11,313,931	10,357
* sec-Butyl alcohol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	748,440	24,774	13,041,102	6,275,927	2,249,797	125,101	1,089,469	23,554,610	2,810
	98o	171,903	9,319	10,701,253	1,012,818	1,532,676	253,034	1,171,838	14,852,841	7
	98n	220	0	0	246,002	49	236,962	15,367	498,600	2
	99o	380,567	76,228	12,708,755	1,475,673	1,394,860	140,513	1,046,198	17,222,794	4
	99n	14	0	0	416,452	51,604	35,246	15,198	518,514	2
* tert-Butyl alcohol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	466,023	2,256	64,310,733	27,469,833	2,447,778	1,794,551	2,230,055	98,721,229	2,091
	98o	662,776	231,209	37,637,302	7,506,442	2,331,750	1,841,732	1,494,042	51,705,253	61
	98n	31,188	200	0	3,841,737	129,572	11,110	23,110	4,036,917	16
	99o	658,568	19,879	38,801,127	8,108,339	1,673,758	1,754,071	1,567,501	52,583,243	21,102
	99n	50,563	122	0	898,535	258,975	35,514	29,903	1,273,612	24

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
106-88-7	1,2-Butylene oxide	88	18	99,931	3,500	0	250	103,681	898	104,579
		95	15	11,083	1	0	0	11,084	5	11,089
		98o	13	10,581	8,401	0	0	18,982	0	18,982
		98n	1	1	0	0	0	1	0	1
		99o	13	11,619	2,402	0	0	14,021	0	14,021
		99n	1	10	0	0	0	10	0	10
123-72-8	* Butyraldehyde	88	26	2,218,692	3,812	1,997	31	2,224,532	117,741	2,342,273
		95	29	291,440	821	149,783	10	442,054	41	442,095
		98o	32	289,834	618	29,000	1,478	320,930	1,663	322,593
		98n	1	122	0	0	0	122	3	125
		99o	34	295,543	466	29,003	149,000	474,012	6,827	480,839
		99n	No reports							
7440-43-9	** Cadmium	88	90	22,430	2,598	0	94,602	119,630	155,313	274,943
		95	48	12,196	463	0	19,861	32,520	90,519	123,039
		98o	50	2,109	542	0	158,670	161,321	100,921	262,242
		98n	20	1,318	0	166,607	2,282,416	2,450,341	60,410	2,510,751
		99o	46	2,377	691	0	31,889	34,957	45,656	80,613
		99n	19	1,920	0	61,000	1,628,788	1,691,708	319,554	2,011,262
—	** Cadmium compounds	88	117	118,978	1,549	2,409	294,877	417,813	1,067,942	1,485,755
		95	120	54,853	948	34,109	797,776	887,686	1,743,893	2,631,579
		98o	94	68,890	923	130,033	778,483	978,329	1,307,328	2,285,657
		98n	39	16,431	1,218	96,875	7,910,629	8,025,153	291,393	8,316,546
		99o	93	29,838	1,501	23	656,007	687,369	701,113	1,388,482
		99n	36	18,768	765	100,000	9,933,779	10,053,312	152,773	10,206,085
156-62-7	* Calcium cyanamide	88	3	12,600	0	0	66,000	78,600	0	78,600
		95	5	10	0	0	0	10	0	10
		98o	4	134	0	0	0	134	0	134
		98n	No reports							
		99o	4	250	0	0	0	250	0	250
		98n	No reports							
133-06-2	* Captan	88	18	14,869	750	5,100	1,000	21,719	12,434	34,153
		95	15	7,280	5	0	5	7,290	3,868	11,158
		98o	11	9,211	5	0	0	9,216	1,761	10,977
		98n	3	2	0	0	0	2	138	140
		99o	13	5,111	5	0	0	5,116	1,070	6,186
		99n	1	0	0	0	0	0	27	27
63-25-2	* Carbaryl	88	23	7,923	877	0	500	9,300	6,198	15,498
		95	21	7,824	10	0	1,060	8,894	26,861	35,755
		98o	22	7,824	10	0	100	7,934	9,156	17,090
		98n	3	7	0	0	0	7	132	139
		99o	15	5,276	5	0	8,405	13,686	41,376	55,062
		99n	3	4	0	0	11,743	11,747	27	11,774

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
1,2-Butylene oxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	990	0	330,194	329,270	93	10,804	671,351	0
	98o	1	0	0	275,443	498,660	307	18,815	793,226	0
	98n	0	0	0	50	0	35	1	86	0
	99o	2	0	0	282,059	382,495	620	14,294	679,470	0
	99n	0	0	0	150	6	0	1	157	0
* Butyraldehyde	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	1,300	2,545,861	22,000	1,982,004	169,714	440,778	5,161,657	10
	98o	1,500	31,000	2,136,982	20,760	1,928,392	651,126	317,716	5,087,476	5,208
	98n	0	0	0	19,950	392	409	122	20,873	0
	99o	1,500	1,200	4,909,209	40,812	7,983,588	176,272	409,140	13,521,721	81,118
	99n	No reports								
** Cadmium	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,471,697	545,490	29,191	633	91,725	53,384	74,415	2,266,535	3,918
	98o	1,101,823	320,139	0	0	27,779	52,294	276,672	1,778,707	9,411
	98n	0	8,110	0	0	0	10,742	2,462,721	2,481,573	1
	99o	88,054	202,689	0	0	29,363	11,102	119,767	450,975	3
	99n	143,393	139,104	0	0	0	471	1,699,147	1,982,115	10
** Cadmium compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	8,221,097	1,482,852	0	1,082	86,561	138,528	2,509,561	12,439,681	11,698
	98o	2,561,776	643,605	0	5,236	3,225	47,340	3,218,632	6,479,814	59,621
	98n	1,900	71,989	0	0	3,000	4,772	8,315,149	8,396,810	94
	99o	3,003,967	636,397	0	212	4,654	19,971	1,824,458	5,489,659	39,151
	99n	77,444	27,995	0	0	0	1,050	6,733,862	6,840,351	120,009
* Calcium cyanamide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	6	6	0
	98o	0	0	0	0	0	0	130	130	0
	98n	No reports								
	99o	0	0	0	0	0	0	26	26	0
	98n	No reports								
* Captan	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,070	0	0	0	9,834	1,072	7,479	23,455	2
	98o	2,697	0	0	0	9,000	3,944	11,297	26,938	1
	98n	0	0	0	0	68,416	0	140	68,556	0
	99o	2,314	0	0	0	9,000	17,910	9,922	39,146	1
	99n	0	0	0	0	66,081	0	27	66,108	0
* Carbaryl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	36,618	0	0	0	467,593	7,885	32,697	544,793	1
	98o	80,456	0	79,931	0	365,862	24,121	14,478	564,848	101
	98n	0	0	0	0	77,947	0	139	78,086	0
	99o	71,825	0	64	0	373,282	11,446	7,907	464,524	0
	99n	0	97	0	0	133,259	0	11,774	145,130	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
1563-66-2 *	Carbofuran	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	7	4,187	2	0	250	4,439	250	4,689
		98o	4	2,921	1	0	0	2,922	0	2,922
		98n	3	16	0	0	0	16	2	18
		99o	4	13,999	112	0	0	14,111	0	14,111
		99n	2	10	0	0	0	10	23	33
75-15-0 *	Carbon disulfide	88	88	124,109,904	39,501	13,400	43,436	124,206,241	58,473	124,264,714
		95	92	84,120,300	39,864	33,644	265	84,194,073	2,949	84,197,022
		98o	95	43,432,877	4,687	16,599	1,651	43,455,814	5,801	43,461,615
		98n	6	924	1	0	0	925	24	949
		99o	105	35,888,425	6,548	16,110	256	35,911,339	2,730	35,914,069
		99n	6	262	1	0	0	263	33	296
56-23-5 **	Carbon tetrachloride	88	95	3,795,248	15,627	98,050	14,759	3,923,684	49,703	3,973,387
		95	71	420,754	717	53,966	0	475,437	7,735	483,172
		98o	55	274,291	2,586	23,163	1,679	301,719	9,956	311,675
		98n	15	954	250	5	0	1,209	10,295	11,504
		99o	57	237,235	84	27,548	938	265,805	7,307	273,112
		99n	13	2,334	1	0	0	2,335	9,259	11,594
463-58-1	Carbonyl sulfide	88	38	25,954,103	0	0	0	25,954,103	0	25,954,103
		95	64	17,934,454	0	0	0	17,934,454	0	17,934,454
		98o	82	19,843,628	0	0	0	19,843,628	0	19,843,628
		98n	1	0	0	0	0	0	0	0
		99o	101	21,344,436	0	0	0	21,344,436	0	21,344,436
		99n	No reports							
5234-68-4 *	Carboxin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	8	0	0	0	8	428	436
		98o	3	5	0	0	0	5	17	22
		98n	No reports							
		99o	4	5	0	0	0	5	154	159
		99n	No reports							
120-80-9	Catechol	88	113	3,789	320,546	0	84,332	408,667	89,474	498,141
		95	127	3,457	24,747	0	3,479	31,683	563	32,246
		98o	139	5,345	24,122	0	1,029	30,496	914	31,410
		98n	4	3	0	0	0	3	24	27
		99o	136	6,801	28,696	0	878	36,375	2,996	39,371
		99n	2	235	0	0	0	235	46	281
133-90-4 *	Chloramben	88	1	1,418	250	0	0	1,668	1,159	2,827
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Carbofuran	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	1	3	47,158	5,422	52,584	1
	98o	0	0	0	0	3	35,601	2,922	38,526	275
	98n	0	0	0	0	243,290	0	15	243,305	1
	99o	0	0	0	0	0	19,615	14,111	33,726	0
	99n	0	0	0	0	162,525	0	25	162,550	0
* Carbon disulfide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	20,874,450	18	5,775,132	368,509	18,092,770	361,938	84,767,924	130,240,741	154,892
	98o	30,024,800	1,985	10,070,374	216,999	32,269,421	239,776	43,245,898	116,069,253	24,336
	98n	0	0	0	25,038	779,188	11,922	849	816,997	0
	99o	25,913,004	1,067	9,352,618	99,958	34,307,856	3,954,153	28,187,942	101,816,598	22,518
	99n	0	0	0	0	530,976	0	290	531,266	0
*** Carbon tetrachloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,837,422	365,067	317,149	50,068	52,608,819	733,254	463,274	56,375,053	34,525
	98o	2,218,866	2,075,495	808,627	43,116	13,865,412	462,232	299,092	19,772,840	4,829
	98n	4,399	0	468,751	277,751	985,513	2,580,491	4,735	4,321,640	1
	99o	7,066,850	3,197,654	369,334	24,319	16,308,400	688,463	231,108	27,886,128	28,183
	99n	0	0	500,408	67,656	1,818,361	37,175	6,228	2,429,828	0
	Carbonyl sulfide	88	NA	NA	NA	NA	NA	NA	NA	NA
		95	0	0	1,508,252	14,572,854	16,000	18,778,809	34,875,915	1
		98o	0	0	2,403,251	17,913,061	0	19,995,133	40,311,445	5
		98n	0	0	0	0	0	0	0	0
		99o	0	0	3,422,194	76,837,634	0	21,523,038	101,782,866	5,714
	99n	No reports								
* Carboxin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,817	0	0	0	0	402	436	3,655	0
	98o	1,110	0	0	0	0	218	22	1,350	0
	98n	No reports								
	99o	1,538	0	0	0	0	60	159	1,757	0
	99n	No reports								
Catechol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	7,145,990	94,995	1,481,057	54,221	68,220	8,844,483	2,774
	98o	0	0	9,717,608	105,959	4,435,187	50,634	35,007	14,344,395	2
	98n	0	0	3,384	0	9,997	0	27	13,408	0
	99o	0	4,594	10,920,474	97,721	3,845,892	79,487	82,363	15,030,531	5
	99n	0	0	0	25,880	867	21,036	236	48,019	0
* Chloramben	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
57-74-9	*** Chlordane	88	2	2,698	4	4,262	0	6,964	0	6,964
		95	1	823	22	0	0	845	0	845
		98o	No reports							
		98n	7	45	0	20,106	25,548	45,699	22	45,721
		99o	No reports							
		99n	4	8	1	0	0	9	40	49
115-28-6	** Chlorendic acid	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	6	0	0	0	6	0	6
		98o	2	30	0	0	0	30	0	30
		98n	No reports							
		99o	2	32	0	0	0	32	0	32
		99n	No reports							
90982-32-4	* Chlorimuron ethyl	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	1	0	0	0	1	0	1
		98o	2	3	0	0	0	3	0	3
		98n	No reports							
		99o	2	27	0	0	0	27	0	27
		99n	No reports							
7782-50-5	* Chlorine	88	1,800	133,085,601	6,622,187	107,624	439,547	140,254,959	1,003,531	141,258,490
		95	1,380	65,761,772	442,215	74,124	13,095	66,291,206	12,286	66,303,492
		98o	1,191	59,757,962	252,747	81,637	56,122	60,148,468	27,010	60,175,478
		98n	149	77,026	168,797	27,639	154,480	427,942	3,000	430,942
		99o	1,109	49,164,795	328,493	62,440	55,320	49,611,048	7,745	49,618,793
		99n	130	206,361	63,090	0	55,359	324,810	94,167	418,977
10049-04-4	* Chlorine dioxide	88	122	12,251,050	2,350	0	41,000	12,294,400	41,750	12,336,150
		95	127	1,305,279	5	0	0	1,305,284	0	1,305,284
		98o	117	1,037,587	71	0	0	1,037,658	0	1,037,658
		98n	4	13,000	510	0	0	13,510	0	13,510
		99o	111	987,794	109	0	5	987,908	0	987,908
		99n	4	5,200	764	0	0	5,964	0	5,964
79-11-8	* Chloroacetic acid	88	37	26,819	850	10	0	27,679	2,506	30,185
		95	31	6,474	16	0	0	6,490	600	7,090
		98o	25	3,585	16	0	0	3,601	500	4,101
		98n	1	0	0	0	0	0	0	0
		99o	21	4,565	17	0	0	4,582	328	4,910
		99n	No reports							
4080-31-3	* 1-(3-Chloroallyl)-3,5,7-triaza-1-azonia-adamantane chloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	7	93	10	0	521	624	2,514	3,138
		98o	16	437	11	0	653	1,101	5,138	6,239
		98n	No reports							
		99o	12	217	11	0	509	737	5,769	6,506
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
*,** Chlordane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	5,150	95	845	6,090	0
	98o	No reports								
	98n	0	0	0	25,778	187,264	35	45,721	258,798	1
	99o	No reports								
** Chlorendic acid	99n	0	0	0	0	470,719	114	46	470,879	0
	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	488	6	494	0
	98o	0	0	0	0	0	567	30	597	0
	98n	No reports								
* Chlorimuron ethyl	99o	0	0	0	0	0	157	32	189	0
	99n	No reports								
	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	5,838	1	5,839	0
	98o	0	0	0	0	0	33,861	3	33,864	0
* Chlorine	98n	No reports								
	99o	0	0	0	0	0	11,885	27	11,912	0
	99n	No reports								
	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	84,986,469	1,791,968	499	1,467	219,882,098	1,180,909	66,282,619	374,126,029	13,375
* Chlorine dioxide	98o	71,150,772	88,349	0	50,291	249,199,167	945,823	60,182,930	381,617,332	9,292
	98n	760,238	0	0	0	4,557,933	26,089	408,279	5,752,539	583
	99o	68,617,968	83,925	2	60,545	205,389,521	732,495	49,575,274	324,459,730	20,587
	99n	2,802,661	0	0	0	3,730,585	87,594	340,384	6,961,224	43
	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
* Chloroacetic acid	95	2,484,920	0	0	0	40,571,008	0	1,326,713	44,382,641	3,933
	98o	2,858,988	0	0	0	48,480,626	6,000	1,081,876	52,427,490	862
	98n	0	0	0	0	0	0	13,510	13,510	0
	99o	722,759	0	0	0	48,022,541	0	1,011,489	49,756,789	263
	99n	0	0	0	0	0	0	5,964	5,964	0
* 1-(3-Chloroallyl)-3,5,7-triaza-1-azonia-adamantane chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	25,013	0	0	0	1,342,493	2,726	6,607	1,376,839	0
	98o	85,721	0	0	0	1,209,175	568	3,250	1,298,714	0
	98n	0	0	0	0	10,132	0	0	10,132	0
	99o	83,319	0	0	0	867,368	1,419	4,768	956,874	1
	99n	No reports								
	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,700	0	0	0	720	4,700	3,570	11,690	0
	98o	78,111	0	0	0	2,310	12,150	6,753	99,324	0
	98n	No reports								
	99o	31,211	0	0	0	1,834	331,049	6,541	370,635	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
106-47-8	*** p-Chloroaniline	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	267	827	0	0	1,094	11	1,105
		98o	4	6,181	12	0	0	6,193	0	6,193
		98n	1	20	0	0	0	20	0	20
		99o	4	131	337	0	0	468	0	468
		99n	1	1	0	0	0	1	0	1
108-90-7	* Chlorobenzene	88	66	4,375,887	98,354	84,457	4,127	4,562,825	117,624	4,680,449
		95	62	1,132,073	1,850	27,405	5	1,161,333	92,582	1,253,915
		98o	75	774,102	662	184,106	16	958,886	19,763	978,649
		98n	18	1,130	250	250	0	1,630	1,870	3,500
		99o	75	675,741	1,433	113,526	214	790,914	16,217	807,131
		99n	17	2,149	1	62,018	0	64,168	15,448	79,616
510-15-6	Chlorobenzilate	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	1	2	1	0	0	3	10	13
75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	25	6,954,443	771	6	0	6,955,220	21,600	6,976,820
		98o	28	5,529,844	40	0	0	5,529,884	4,979	5,534,863
		98n	3	11	0	0	0	11	614	625
		99o	29	5,644,136	44	0	0	5,644,180	4,989	5,649,169
		99n	6	24	0	0	0	24	119	143
75-45-6	* Chlorodifluoromethane (HCFC-22)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	244	12,585,061	2,279	22	1	12,587,363	55,084	12,642,447
		98o	242	8,942,117	3,652	0	1	8,945,770	50,648	8,996,418
		98n	1	64,602	0	0	0	64,602	0	64,602
		99o	250	8,376,930	3,652	0	1	8,380,583	67,799	8,448,382
		99n	5	108,930	0	0	0	108,930	0	108,930
75-00-3	Chloroethane	88	50	4,907,292	27,448	1,510	1	4,936,251	32,260	4,968,511
		95	55	2,890,354	2,320	0	116	2,892,790	4,400	2,897,190
		98o	59	2,198,423	1,024	67	50	2,199,564	3,900	2,203,464
		98n	2	16	0	0	0	16	3	19
		99o	56	2,127,670	261	130	0	2,128,061	2,309	2,130,370
		99n	No reports							
67-66-3	*** Chloroform	88	169	25,988,609	1,114,965	36,000	68,647	27,208,221	143,124	27,351,345
		95	163	10,496,501	332,473	33,276	4,297	10,866,547	6,647	10,873,194
		98o	140	6,506,538	135,414	44,102	12,344	6,698,398	42,857	6,741,255
		98n	21	2,226	6	5	0	2,237	3,471	5,708
		99o	132	5,335,138	86,305	59,399	11,771	5,492,613	32,282	5,524,895
		99n	22	3,231	1	64,297	0	67,529	59,348	126,877

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
*** p-Chloroaniline	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	540	0	120,301	940	121,781	0
	98o	0	0	46,000	520	0	6,424	16,097	69,041	0
	98n	0	0	0	0	25,861	0	20	25,881	0
	99o	0	0	570,000	1,372	1,112	7,396	471	580,351	0
	99n	0	0	0	0	17,936	0	1	17,937	0
* Chlorobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	9,123,869	1,016,982	2,099,757	1,366,145	11,231,684	1,503,368	1,242,678	27,584,483	20,613
	98o	1,107,325	976,071	5,490,480	3,476,264	10,333,365	4,804,121	983,806	27,171,432	831
	98n	260,432	0	20,907	81,425	1,819,899	1,302	2,040	2,186,005	3
	99o	4,394,439	6,186,066	4,355,424	1,518,569	6,283,038	1,640,671	784,133	25,162,340	16,458
	99n	443,673	0	8,156	287,236	2,576,220	1,174	64,394	3,380,853	11
Chlorobenzilate	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	41,000	0	9	41,009	0
1-Chloro-1,1-difluoroethane (HCFC-142b)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	52,560	0	0	320	304,070	26,330	6,933,797	7,317,077	459
	98o	67	0	0	5,400	534,586	165,589	5,537,482	6,243,124	103
	98n	0	0	0	0	136,697	0	625	137,322	0
	99o	12,089,067	0	0	142,321	537,217	190,798	5,577,057	18,536,460	13
	99n	0	0	0	0	591,193	0	124	591,317	0
* Chlorodifluoromethane (HCFC-22)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,374,126	242,386	0	27,002	401,771	258,992	12,473,833	15,778,110	196,364
	98o	698,765	168,042	0	237	505,214	291,198	9,092,224	10,755,680	125,566
	98n	0	0	0	0	0	0	63,090	63,090	1,512
	99o	867,732	472,424	0	2,422	346,748	203,402	8,524,280	10,417,008	28,185
	99n	3	0	0	0	12,715	1,114	108,966	122,798	1
Chloroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,321,094	155,726	13,500,359	45,855	28,074,197	492,722	2,896,879	47,486,832	8,570
	98o	5,135,802	175,104	11,263,574	17,934	35,499,891	332,191	2,206,187	54,630,683	135
	98n	0	0	0	0	48,025	14	15	48,054	1
	99o	535,427	431,321	22,516,043	119,801	28,690,272	504,450	2,129,345	54,926,659	1,402
	99n	No reports								
*** Chloroform	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,138,816	175,713	17,199,219	103,558	17,286,695	2,062,169	10,831,218	52,797,388	27,208
	98o	6,749,489	1,871,565	5,133,726	164,858	16,253,651	1,722,202	6,714,471	38,609,962	21,625
	98n	53,314	0	1,650	326,742	1,473,283	2,409,085	3,716	4,267,790	6
	99o	8,936,153	2,756,665	1,606,655	89,563	25,578,063	2,025,057	5,489,112	46,481,268	51,614
	99n	222,080	0	18,133	468,149	2,136,199	187,350	70,520	3,102,431	53

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	
74-87-3 *	Chloromethane	88	81	11,567,647	115,985	165,250	0	11,848,882	11,908,022
		95	111	4,394,877	57,430	50,198	35	4,502,540	4,504,097
		98o	101	2,650,625	1,742	323,201	57	2,975,625	2,976,577
		98n	9	2,812	0	0	0	2,812	2,819
		99o	98	2,776,733	2,159	158,680	53	2,937,625	2,939,819
		99n	11	1,150	0	0	8,228	9,378	13,834
107-30-2 **	Chloromethyl methyl ether	88	4	3,033	0	0	0	3,033	3,033
		95	3	2,865	10	0	0	2,875	2,945
		98o	2	1,000	0	0	0	1,000	1,000
		98n	1	0	0	0	0	0	0
		99o	2	1,300	0	0	0	1,300	1,300
		99n	3	70	1	0	0	71	240
563-47-3 **	3-Chloro-2-methyl-1-propene	88	NR	NR	NR	NR	NR	NR	NR
		95	3	19,859	0	0	0	19,859	19,859
		98o	3	7,353	0	0	0	7,353	7,353
		98n	No reports						
		99o	4	8,716	0	0	0	8,716	8,716
		99n	No reports						
—	Chlorophenols	88	9	2,573	272	71,554	0	74,399	74,401
		95	9	4,997	30	105,687	0	110,714	111,672
		98o	6	4,864	36	73,548	0	78,448	86,461
		98n	5	16	0	0	0	16	4,191
		99o	8	3,519	75	59,159	2	62,755	66,094
		99n	3	1	0	0	0	1	286
76-06-2 *	Chloropicrin	88	NR	NR	NR	NR	NR	NR	NR
		95	15	11,472	0	0	0	11,472	11,508
		98o	16	7,560	0	0	0	7,560	7,830
		98n	1	4	0	0	0	4	4
		99o	15	6,647	0	0	0	6,647	6,648
		99n	1	4	0	0	0	4	4
126-99-8 **	Chloroprene	88	13	1,948,008	287	68,792	0	2,017,087	2,017,087
		95	15	983,932	0	60,000	5,104	1,049,036	1,056,138
		98o	12	977,628	0	100,000	0	1,077,628	1,077,628
		98n	2	528	0	0	0	528	529
		99o	10	906,891	0	29,000	0	935,891	935,891
		99n	1	255	0	0	0	255	255
542-76-7	3-Chloropropionitrile	88	NR	NR	NR	NR	NR	NR	NR
		95	No reports						
		98o	No reports						
		98n	No reports						
		99o	No reports						
		99n	2	4	0	0	0	4	157

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Chloromethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,803,788	650	4,517,896	4,505	14,364,776	240,406	4,522,298	26,454,319	7,918
	98o	3,447,064	23,740	4,341,426	17,950	8,368,825	292,447	2,931,738	19,423,190	12,003
	98n	0	0	0	0	342,535	1,997,213	2,861	2,342,609	1
	99o	3,323,869	1	5,274,618	2,063	13,727,873	234,597	2,935,887	25,498,908	2,699
	99n	0	0	0	0	363,375	0	13,928	377,303	33,696
** Chloromethyl methyl ether	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	15,900	0	2,909	18,809	0
	98o	0	0	0	0	280	0	1,000	1,280	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	1,600	0	1,300	2,900	0
	99n	0	0	0	0	163,369	0	235	163,604	0
** 3-Chloro-2-methyl-1-propene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	544,134	14,819	19,859	578,812	10
	98o	0	0	0	0	637,973	344	7,353	645,670	0
	98n	No reports								
	99o	0	0	0	0	550,770	16,664	8,525	575,959	0
	99n	No reports								
** Chlorophenols	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,919,075	0	0	6,400	237,484	26,212	109,865	3,299,036	1,776
	98o	2,737,000	0	0	0	297,377	7,807	85,733	3,127,917	725
	98n	0	0	1,009	62,967	281,511	9,645	3,940	359,072	0
	99o	2,148,700	0	0	0	1,740,690	3,639	65,024	3,958,053	1,070
	99n	0	0	2,837	78,708	188,731	71	286	270,633	0
* Chloropicrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	9,981	632	0	54	441	34,524	10,677	56,309	0
	98o	2,250	1,064	0	0	1,110	483	7,544	12,451	1
	98n	0	0	0	0	0	0	4	4	0
	99o	2,206	914	0	0	4,233	412	6,647	14,412	10
	99n	0	0	0	0	0	0	4	4	0
** Chloroprene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	480,972	466,280	9,105	4,233,572	138,421	1,051,019	6,379,369	518
	98o	0	306,514	1,200,000	66,206	8,860,286	209,184	1,077,632	11,719,822	10
	98n	0	0	0	13,385	102,414	173	299	116,271	0
	99o	0	584,238	1,945,200	798	8,671,014	115,522	935,889	12,252,661	0
	99n	0	0	0	0	102,743	0	15	102,758	0
3-Chloropropionitrile	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	106,854	0	157	107,011	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
63938-10-3	Chlorotetrafluoroethane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	1	129,800	0	0	0	129,800	0	129,800
		99n	1	0	0	0	0	0	0	0
354-25-6	1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	504,553	0	0	0	504,553	0	504,553
		98o	3	23,336	0	0	0	23,336	0	23,336
		98n	No reports							
		99o	3	59,525	0	0	0	59,525	0	59,525
		99n	No reports							
2837-89-0	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	11	752,215	1,255	0	0	753,470	0	753,470
		98o	23	750,474	5	0	0	750,479	0	750,479
		98n	1	852	0	0	0	852	0	852
		99o	22	599,721	5	0	0	599,726	0	599,726
		99n	1	4,651	0	0	0	4,651	0	4,651
1897-45-6 *	Chlorothalonil	88	10	28,476	250	0	0	28,726	396,274	425,000
		95	25	7,440	35	0	750	8,225	97,420	105,645
		98o	25	9,236	35	0	0	9,271	301,801	311,072
		98n	1	0	0	5	32,000	32,005	5	32,010
		99o	19	5,106	7	0	0	5,113	280,116	285,229
		99n	1	0	0	0	0	0	0	0
75-88-7	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	35,523	0	0	0	35,523	0	35,523
		98o	4	162,775	52	0	0	162,827	0	162,827
		98n	No reports							
		99o	3	23,950	30	0	0	23,980	0	23,980
		99n	No reports							
75-72-9	Chlorotrifluoromethane (CFC-13)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	250	0	0	0	250	0	250
		98o	1	14,700	5	0	0	14,705	0	14,705
		98n	No reports							
		99o	2	10,790	5	0	0	10,795	0	10,795
		99n	No reports							
5598-13-0 *	Chlorpyrifos methyl	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	510	0	0	6,000	6,510	0	6,510
		98o	5	500	0	0	0	500	0	500
		98n	No reports							
		99o	4	10	0	0	0	10	24,197	24,207
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Chlorotetrafluoroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	29,571	0	0	29,571	0
	99o	0	0	0	0	0	0	129,800	129,800	0
	99n	0	0	0	0	47,355	0	0	47,355	0
1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1,725	0	504,011	505,736	0
	98o	0	0	0	0	165,890	0	23,136	189,026	0
	98n	No reports								
	99o	0	0	0	0	457,049	474,629	59,325	991,003	0
	99n	No reports								
2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	239,200	0	0	193,194	35,816	753,296	1,221,506	401
	98o	44,530	282,345	0	0	501,437	0	749,963	1,578,275	32
	98n	0	0	0	0	0	0	852	852	0
	99o	110,249	246,089	0	0	263,090	1,085	599,669	1,220,182	41
	99n	0	0	0	0	0	0	4,651	4,651	0
* Chlorothalonil	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,339	0	0	2,294	24,716	139,966	102,279	274,594	5
	98o	4,726	0	0	0	65,406	195,241	311,120	576,493	419
	98n	0	0	0	0	0	0	32,000	32,000	0
	99o	25,082	0	0	0	63,840	149,720	285,866	524,508	1,614
	99n	0	0	0	0	14,075	0	0	14,075	0
2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	35,608	35,608	0
	98o	0	0	0	0	33,000	0	162,925	195,925	4
	98n	No reports								
	99o	0	0	0	0	250,000	0	23,700	273,700	1
	99n	No reports								
Chlorotrifluoromethane (CFC-13)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	30	30	0
	98o	0	0	0	0	0	0	14,705	14,705	0
	98n	No reports								
	99o	0	33,339	0	0	0	0	10,795	44,134	0
	99n	No reports								
* Chlorpyrifos methyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	400	0	0	0	0	6,095	6,402	12,897	0
	98o	2,000	0	0	0	0	4,990	285	7,275	0
	98n	No reports								
	99o	4,000	0	0	0	0	0	8	4,008	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
64902-72-3 *	Chlorsulfuron	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	1	0	0	0	1	0	1
		98o	1	1	0	0	0	1	0	1
		98n	No reports							
		99o	1	1	0	0	0	1	0	1
		99n	No reports							
7440-47-3	Chromium	88	1,257	566,498	75,442	2,249	9,282,766	9,926,955	11,710,612	21,637,567
		95	1,995	418,408	17,266	33	1,109,958	1,545,665	5,771,254	7,316,919
		98o	1,954	478,733	13,112	9	685,766	1,177,620	12,286,701	13,464,321
		98n	58	7,409	25,220	260,448	14,863,233	15,156,310	1,684,877	16,841,187
		99o	1,971	300,814	11,236	56	715,100	1,027,206	15,226,590	16,253,796
		99n	55	3,879	20,333	38,250	10,484,695	10,547,157	1,582,791	12,129,948
—	Chromium compounds	88	1,214	764,851	326,027	52,653	30,938,106	32,081,637	14,898,699	46,980,336
		95	1,478	650,311	138,551	1,084,747	22,090,165	23,963,774	20,389,031	44,352,805
		98o	1,501	347,629	112,520	874,795	30,241,083	31,576,027	14,258,085	45,834,112
		98n	325	305,563	114,397	667,755	58,501,745	59,589,460	5,859,141	65,448,601
		99o	1,471	467,071	97,379	816,717	29,591,378	30,972,545	11,704,628	42,677,173
		99n	311	281,396	97,202	720,000	122,827,111	123,925,709	5,140,315	129,066,024
6459-94-5 **	C.I. Acid Red 114	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
569-64-2 *	C.I. Basic Green 4	88	6	750	0	0	0	750	250	1,000
		95	2	5	0	0	0	5	0	5
		98o	3	5	0	0	0	5	750	755
		98n	1	0	0	0	0	0	0	0
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
989-38-8	C.I. Basic Red 1	88	No reports							
		95	2	0	0	0	0	0	668	668
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
28407-37-6	C.I. Direct Blue 218	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	6	10	6	0	0	16	1,400	1,416
		98o	6	0	10	0	5	15	2,142	2,157
		98n	No reports							
		99o	8	0	10	0	0	10	2,259	2,269
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Chlorsulfuron	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	3,444	1	3,445	0
	98o	0	0	0	0	0	10,508	1	10,509	0
	98n	No reports								
	99o	0	0	0	0	0	2,221	1	2,222	0
	99n	No reports								
Chromium	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	29,383,000	102,620,653	9,781,278	51,737	407,059	1,625,216	8,196,383	152,065,326	41,531
	98o	86,941,979	85,701,571	86,318	17,198	815,469	1,198,804	13,503,531	188,264,870	55,236
	98n	1	141,529	0	0	59,920	48,806	16,443,437	16,693,693	9
	99o	27,015,081	86,204,633	0	1,555	506,478	774,300	12,439,973	126,942,020	3,887,557
	99n	1,524	383,454	0	0	1,977	187,876	11,309,149	11,883,980	15
Chromium compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	36,402,729	45,926,897	44,280	66,691	94,217,654	3,498,201	40,262,731	220,419,183	1,658,998
	98o	38,004,484	33,563,950	10,015	33,545	1,225,288	2,591,138	44,564,125	119,992,545	175,639
	98n	64,201	903,937	0	57,374	133,506	449,066	65,248,633	66,856,717	2,871
	99o	27,604,292	34,962,321	2,000	64,839	8,936,864	1,354,628	43,372,240	116,297,184	1,444,247
	99n	14,417	1,765,370	0	0	91,982	207,012	85,760,261	87,839,042	43,000,521
** C.I. Acid Red 114	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* C.I. Basic Green 4	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	110	499	10	619	0
	98o	0	0	0	0	0	998	20	1,018	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
C.I. Basic Red 1	88	No reports								
	95	0	0	0	54	0	289	668	1,011	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
C.I. Direct Blue 218	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5	0	0	0	619	5,151	1,411	7,186	0
	98o	0	260	0	0	312	1,417	2,144	4,133	0
	98n	No reports								
	99o	0	450	0	0	53	1,622	2,262	4,387	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
16071-86-6	C.I. Direct Brown 95	88	No reports							
		95	1	0	0	0	0	0	0	0
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	No reports							
2832-40-8	C.I. Disperse Yellow 3	88	1	398	302	0	0	700	899	1,599
		95	3	450	27	0	0	477	1,061	1,538
		98o	3	205	25	0	0	230	876	1,106
		98n	No reports							
		99o	3	50	25	0	0	75	900	975
		99n	No reports							
81-88-9	C.I. Food Red 15	88	2	250	0	0	0	250	0	250
		95	2	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	3	0	0	0	0	0	0	0
		99n	No reports							
3118-97-6	C.I. Solvent Orange 7	88	No reports							
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
97-56-3	C.I. Solvent Yellow 3	88	1	250	0	0	0	250	0	250
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
842-07-9	C.I. Solvent Yellow 14	88	2	0	0	0	0	0	0	0
		95	No reports							
492-80-8	*,** C.I. Solvent Yellow 34	98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	2	5	0	0	0	5	157	162
7440-48-4	** Cobalt	88	178	44,038	16,744	0	213,204	273,986	248,089	522,075
		95	260	35,521	17,070	0	46,487	99,078	223,081	322,159
		98o	268	40,630	3,597	0	85,063	129,290	414,253	543,543
		98n	6	280	7	0	133,731	134,018	17,870	151,888
		99o	250	24,325	5,600	0	5,803	35,728	330,771	366,499
		99n	5	27	0	0	83,115	83,142	5	83,147

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year. C.I. Solvent Yellow 14 has no reports for 1998 or 1999 and C.I. Solvent Yellow 34 has no reports for 1988 and 1995.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
C.I. Direct Brown 95	88	No reports								
	95	0	0	0	0	0	0	0	0	0
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
C.I. Disperse Yellow 3	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1,061	5,189	1,410	7,660	0
	98o	0	0	0	0	0	1,882	1,106	2,988	1
	98n	No reports								
	99o	0	0	0	0	0	0	950	950	0
	99n	No reports								
C.I. Food Red 15	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
C.I. Solvent Orange 7	88	No reports								
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
C.I. Solvent Yellow 3	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
C.I. Solvent Yellow 14	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
*,** C.I. Solvent Yellow 34	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	129,504	0	162	129,666	0
** Cobalt	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	3,583,408	12,062,557	0	1	379,265	85,327	250,979	16,361,537	19
	98o	4,249,702	7,607,336	0	10,000	14,107	32,813	326,390	12,240,348	311
	98n	0	0	0	0	0	0	151,859	151,859	1
	99o	4,421,707	7,424,436	0	0	5,886	14,387	250,501	12,116,917	38
	99n	0	0	0	0	0	0	83,124	83,124	0

Note: Data from Section 8 (Current Year) of Form R. C.I. Solvent Yellow 14 has no reports for 1998 or 1999 and C.I. Solvent Yellow 34 has no reports for 1988 and 1995. 98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
—	** Cobalt compounds	88	150	56,410	63,662	18,500	38,960	177,532	300,641	478,173
		95	233	29,756	70,646	51,657	505,634	657,693	352,486	1,010,179
		98o	287	32,098	35,350	32,950	500,101	600,499	353,801	954,300
		98n	157	55,229	24,069	12,006	12,610,937	12,702,241	461,156	13,163,397
		99o	288	33,861	58,826	30,421	494,601	617,709	501,159	1,118,868
		99n	155	45,019	24,948	17,001	14,769,746	14,856,714	401,282	15,257,996
7440-50-8	* Copper	88	1,976	1,525,312	117,147	15,646	10,466,155	12,124,260	17,233,013	29,357,273
		95	2,797	1,270,554	44,746	29,787	1,658,490	3,003,577	14,995,886	17,999,463
		98o	2,794	783,514	37,959	56,634	1,535,810	2,413,917	9,189,922	11,603,839
		98n	58	117,699	17,196	23,211	278,545,097	278,703,203	2,423,176	281,126,379
		99o	2,726	2,147,555	33,835	62,367	1,356,172	3,599,929	9,389,644	12,989,573
		99n	45	83,855	2,985	5	12,843,001	12,929,846	1,593,575	14,523,421
—	Copper compounds	88	1,045	3,158,742	185,292	165,957	29,683,607	33,193,598	14,135,121	47,328,719
		95	1,470	2,026,261	93,463	284,852	40,773,223	43,177,799	10,135,478	53,313,277
		98o	1,578	3,537,103	95,291	187,400	51,931,154	55,750,948	8,689,722	64,440,670
		98n	385	608,782	369,878	1,374,646	1,233,639,938	1,235,993,244	4,574,527	1,240,567,771
		99o	1,592	1,552,594	84,642	247,755	44,273,099	46,158,090	9,377,458	55,535,548
		99n	362	657,441	276,825	1,273,581	1,731,744,734	1,733,952,581	4,289,275	1,738,241,856
8001-58-9	*** Creosote	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	85	928,376	8,427	0	500	937,303	2,595,570	3,532,873
		98o	78	869,799	24,842	0	12,275	906,916	1,204,515	2,111,431
		98n	14	1,142	0	0	2,176,468	2,177,610	1,996	2,179,606
		99o	75	742,018	22,318	0	34,237	798,573	607,485	1,406,058
		99n	15	1,059	1	0	1,174,746	1,175,806	636	1,176,442
120-71-8	** p-Cresidine	88	6	7,080	250	0	750	8,080	4,700	12,780
		95	6	4,606	0	0	0	4,606	2,200	6,806
		98o	4	2,400	0	0	0	2,400	0	2,400
		98n	No reports							
		99o	3	1,730	410	0	0	2,140	0	2,140
		99n	No reports							
108-39-4	* m-Cresol	88	15	18,432	283	0	455	19,170	13,503	32,673
		95	29	48,000	1,675	680,000	0	729,675	3,316	732,991
		98o	26	44,999	141	502,670	4,655	552,465	632	553,097
		98n	4	9	0	0	0	9	0	9
		99o	24	41,392	670	401,011	3,096	446,169	755	446,924
		99n	6	116	1	250	0	367	279	646
95-48-7	o-Cresol	88	28	89,793	448	0	1,667	91,908	12,458	104,366
		95	23	12,425	82	590,000	0	602,507	5,257	607,764
		98o	21	9,270	16	466,578	20	475,884	39,525	515,409
		98n	6	12	0	0	0	12	0	12
		99o	25	11,059	19	381,376	20	392,474	2,674	395,148
		99n	7	717	1	250	11,770	12,738	743	13,481

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** Cobalt compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	222,882	1,987,024	0	847	1,394,924	98,451	958,210	4,662,338	4,241
	98o	151,421	1,678,717	0	7,985	1,459,617	37,257	955,881	4,290,878	1,602
	98n	39,737	18,567	0	0	46,417	15	13,158,477	13,263,213	4,021
	99o	314,090	1,460,920	117	14,204	1,157,119	65,427	1,093,446	4,105,323	3,773
	99n	164,666	11,144	0	0	0	10	15,256,539	15,432,359	30
* Copper	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	497,597,679	568,944,460	506	43,341	41,198,550	1,758,270	11,536,321	1,121,079,127	92,197
	98o	538,829,326	569,858,783	189,372	499,061	45,072,502	1,422,645	8,791,428	1,164,663,117	952,172
	98n	2,708,008	817,145	0	0	1,370	27,294	281,065,001	284,618,818	5
	99o	467,406,131	597,997,865	0	332	742,770	1,671,710	8,440,789	1,076,259,597	165,014
	99n	3,363,123	1,633,389	0	0	51,153	42,171	14,495,146	19,584,982	2
Copper compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	215,002,488	181,627,923	0	30,802	60,465,252	2,278,683	50,020,457	509,425,605	1,323,186
	98o	186,532,474	150,451,923	0	23,292	2,735,305	1,819,514	61,391,920	402,954,428	4,149,261
	98n	5,677,807	1,786,645	0	15,858	483,340	168,564	1,349,748,709	1,357,880,923	297,963
	99o	220,044,782	148,611,331	1,200	324,339	3,100,191	1,429,907	52,719,419	426,231,169	4,476,230
	99n	2,005,320	2,249,900	0	0	7,214,180	491,128	1,476,246,887	1,488,207,415	330,001,090
*** Creosote	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	64,447,471	2,180	6,100	94,871	163,131	298,027	3,208,184	68,219,964	322,992
	98o	11,514,469	717,808	2,626,352	81,103	842,960	902,470	1,907,684	18,592,846	541,707
	98n	0	0	10	49,454	523,727	41,936	2,177,407	2,792,534	3
	99o	6,427,378	696,540	2,143,805	163,252	432,906	1,051,318	1,345,805	12,261,004	519,891
	99n	0	0	471	225	1,490,119	22,639	1,179,126	2,692,580	0
** p-Cresidine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	51,611	6,806	58,417	3,400
	98o	0	0	0	0	0	29,000	2,400	31,400	0
	98n	No reports								
	99o	0	0	0	0	1,106	5,700	1,387	8,193	0
	99n	No reports								
* m-Cresol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,309,373	1,500,001	615,425	17,910	329,024	91,159	737,708	5,600,600	151
	98o	1,769,226	1,064,540	649,489	18,878	240,659	8,216	554,568	4,305,576	719
	98n	0	0	0	45,524	40,473	0	9	86,006	0
	99o	32,821	943,956	631,926	19,426	264,730	7,763	450,744	2,351,366	667
	99n	0	0	0	44,270	531,957	0	436	576,663	0
o-Cresol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	171,098	76	304,801	321	184,032	125,072	606,682	1,392,082	117
	98o	95,701	0	339,395	1,218	206,884	17,724	516,766	1,177,688	376
	98n	0	0	0	45,524	58,649	0	12	104,185	0
	99o	29,734	75	250,748	24,837	206,544	16,996	394,795	923,729	89
	99n	0	0	0	44,270	521,460	1,500	14,240	581,470	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
106-44-5	p-Cresol	88	18	640,703	1,143	152,000	62,291	856,137	643	856,780
		95	30	44,901	1,066	342,500	0	388,467	3,168	391,635
		98o	30	57,003	43	299,485	0	356,531	50,556	407,087
		98n	5	13	0	0	0	13	0	13
		99o	28	44,318	422	244,834	68	289,642	32,884	322,526
		99n	7	148	1	250	0	399	222	621
1319-77-3 *	Cresol (mixed isomers)	88	111	787,305	6,811	1,804,060	4,516	2,602,692	483,488	3,086,180
		95	155	1,606,566	15,011	648,882	2,345	2,272,804	47,654	2,320,458
		98o	147	1,563,222	8,374	489,033	11,839	2,072,468	18,781	2,091,249
		98n	21	2,449	251	750	12,984	16,434	1,032	17,466
		99o	151	1,410,156	5,025	899,887	9,317	2,324,385	117,260	2,441,645
		99n	18	3,500	252	0	63,963	67,715	17,134	84,849
4170-30-3 *	Crotonaldehyde	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	7	101,579	680	391,500	0	493,759	0	493,759
		98o	6	29,584	3,800	1,300	0	34,684	0	34,684
		98n	1	0	0	0	0	0	0	0
		99o	8	28,867	37,297	1,350	0	67,514	0	67,514
		99n	3	16	1	0	0	17	176	193
98-82-8	Cumene	88	118	5,239,958	3,201	30,165	8,591	5,281,915	83,287	5,365,202
		95	241	1,876,436	1,490	9,403	1,102	1,888,431	70,457	1,958,888
		98o	245	1,326,837	660	1,040	9,537	1,338,074	32,676	1,370,750
		98n	159	10,482	5	0	926	11,413	861	12,274
		99o	242	1,393,731	3,133	1,271	9,196	1,407,331	16,670	1,424,001
		99n	145	11,274	19	0	12	11,305	1,188	12,493
80-15-9	Cumene hydroperoxide	88	40	192,523	1,784	371,000	250	565,557	22,944	588,501
		95	44	72,898	68	280,000	3,400	356,366	9,725	366,091
		98o	45	75,036	79	210,000	11,000	296,115	10,747	306,862
		98n	No reports							
		99o	49	63,230	120	330,000	10,400	403,750	10,428	414,178
		99n	3	173	0	0	0	173	14,690	14,863
135-20-6 **	Cupferron	88	4	920	0	0	0	920	0	920
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
21725-46-2 *	Cyanazine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	991	492	0	0	1,483	2,527	4,010
		98o	6	193	0	0	0	193	0	193
		98n	1	9	0	0	12,000	12,009	0	12,009
		99o	2	77	0	0	0	77	0	77
		99n	1	67	0	0	81,464	81,531	0	81,531

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
p-Cresol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	137,136	900,001	454,288	58,641	239,766	989,315	392,942	3,172,089	100
	98o	83,138	654,268	449,080	76,711	1,156,104	54,263	387,019	2,860,583	280
	98n	0	0	0	45,524	58,586	0	13	104,123	0
	99o	21,521	471,978	368,924	105,385	1,393,414	45,727	321,096	2,728,045	230
	99n	0	0	0	44,270	511,244	0	416	555,930	0
* Cresol (mixed isomers)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,052,270	187,427	5,077,170	637,169	8,558,967	1,143,472	2,204,126	18,860,601	6,814
	98o	125,717	645,573	7,298,232	434,321	11,306,167	313,764	2,097,628	22,221,402	8
	98n	0	0	0	2,688,010	1,748,792	105,015	17,166	4,558,983	2
	99o	117,186	816,127	5,452,294	400,508	10,422,770	324,550	2,497,295	20,030,730	1,704
	99n	167,180	0	0	2,894,302	1,561,752	13,363	68,371	4,704,968	10
* Crotonaldehyde	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	202,400	0	498,820	701,220	0
	98o	0	0	1,837,500	0	569,220	16	34,884	2,441,620	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	1,823,660	7,492	1,255,658	1,552	66,911	3,155,273	0
	99n	0	0	0	0	252,503	0	188	252,691	0
Cumene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	17,285,493	60,160	7,052,013	1,626,798	6,412,021	169,307	2,048,017	34,653,809	2,276
	98o	19,166,077	147,270	9,222,203	855,853	16,050,082	187,647	1,482,966	47,112,098	917
	98n	161,872	500	14,642	614,478	74,840	17,918	6,080	890,330	878
	99o	20,953,597	58,642	5,571,585	1,043,530	12,802,582	114,628	1,492,979	42,037,543	523
	99n	417,429	308	21,094	711,535	389,237	3,104	9,153	1,551,860	23
	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	6	482,755	21,434	375,758	879,953	1
	98o	0	0	0	1,066	399,343	264,990	304,800	970,199	1
	98n	No reports								
	99o	0	6	500	476	1,095,436	435,408	424,604	1,956,430	1
	99n	0	0	0	50,683	111,872	15,702	326	178,583	0
** Cupferron	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	5,648	0	5,648	0
	98o	0	0	13,228	659	0	0	0	13,887	0
	98n	No reports								
	99o	0	0	3,750	9,623	0	0	0	13,373	0
	99n	No reports								
* Cyanazine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	545,000	8,100	3,887	556,987	0
	98o	0	0	0	0	43,000	27,576	453	71,029	0
	98n	0	0	0	0	0	0	12,000	12,000	1
	99o	0	0	0	0	0	75,400	75,500	150,900	0
	99n	0	0	0	0	0	0	81,531	81,531	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
—	Cyanide compounds	88	393	1,248,012	195,244	3,707,326	107,208	5,257,790	581,408	5,839,198
		95	247	1,074,734	89,753	4,429,640	18,581	5,612,708	149,457	5,762,165
		98o	242	703,161	54,613	3,762,384	16,821	4,536,979	109,484	4,646,463
		98n	86	62,250	2,996	18,750	3,882,176	3,966,172	45,428	4,011,600
		99o	240	944,249	68,306	3,459,749	10,989	4,483,293	76,107	4,559,400
		99n	67	13,934	2,157	19,000	2,302,994	2,338,085	8,873	2,346,958
1134-23-2 *	Cycloate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	26	1,108	16	0	1,150	242	1,392
		98o	3	97	113	77	0	287	4	291
		98n	No reports							
		99o	3	625	113	89	0	827	684	1,511
		99n	No reports							
110-82-7 *	Cyclohexane	88	304	13,984,542	20,071	334,471	38,190	14,377,274	211,575	14,588,849
		95	366	8,098,877	18,908	238,200	10,809	8,366,794	105,702	8,472,496
		98o	378	5,947,982	13,718	348,428	1,357	6,311,485	56,057	6,367,542
		98n	197	84,998	28	8,430	262	93,718	12,027	105,745
		99o	369	4,763,575	13,055	272,426	1,051	5,050,107	100,931	5,151,038
		99n	193	72,799	26	61,998	6,422	141,245	13,156	154,401
108-93-0 *	Cyclohexanol	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	25	167,959	154	3,623,000	0	3,791,113	70	3,791,183
		98o	27	300,624	298	4,307,800	0	4,608,722	1,490	4,610,212
		98n	3	43	0	0	0	43	13	56
		99o	24	161,524	41	3,730,307	0	3,891,872	881	3,892,753
		99n	7	9	0	0	0	9	181	190
68359-37-5 *	Cyfluthrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	10	0	0	0	10	0	10
		98o	2	4	1	0	0	5	0	5
		98n	1	0	0	0	0	0	0	0
		99o	4	16	72	0	0	88	0	88
		99n	1	0	0	0	0	0	0	0
68085-85-8 *	Cyhalothrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
94-75-7 **	2,4-D (acetic acid)	88	28	7,020	549	3,789	38,000	49,358	68,422	117,780
		95	27	6,888	1,083	250	4,325	12,546	17,430	29,976
		98o	28	3,970	88	1,300	1,798	7,156	2,887	10,043
		98n	6	18	0	29,909	0	29,927	269	30,196
		99o	28	7,879	74	440	1,798	10,191	11,426	21,617
		99n	7	34	0	21,850	0	21,884	480	22,364

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Cyanide compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	664,976	32,518	19,000	3,523	9,342,137	713,508	5,685,128	16,460,790	6,222
	98o	1,692,214	58,277	7,028,885	2,185	11,964,665	718,714	4,574,383	26,039,323	2,497
	98n	4,803,744	0	143	195	22,269,231	55,905	3,952,976	31,082,194	24
	99o	463,102	24,093	5,174,259	31	12,949,714	1,059,035	4,531,674	24,201,908	25,138
	99n	1,091,815	0	92	116	12,243,449	20,585	2,427,129	15,783,186	27,248
* Cycloate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	2,000	6,001	1,346	9,347	0
	98o	0	0	0	0	1,148	3,574	289	5,011	0
	98n	No reports								
	99o	0	0	0	0	1,097	2,054	600	3,751	1,652
	99n	No reports								
* Cyclohexane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	54,644,021	1,585,367	10,345,060	5,145,025	23,742,793	1,250,210	8,426,987	105,139,463	123,189
	98o	67,098,407	638,827	18,369,452	3,402,221	21,853,631	4,380,775	6,176,219	121,919,532	9,059
	98n	457,159	1,685	3,156	4,891,083	3,435,597	248,265	93,750	9,130,695	357
	99o	42,836,316	961,401	15,660,044	1,898,114	23,104,408	2,183,050	5,103,249	91,746,582	175,033
	99n	1,567,007	63,963	18,735	2,573,663	3,408,308	135,743	146,034	7,913,453	2,164
* Cyclohexanol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	677,199	16,473	154,921	21,584	3,836,687	4,706,864	1
	98o	0	0	3,021,084	75,661	150,421	104,240	4,649,061	8,000,467	0
	98n	0	0	29	144	12,360	0	33	12,566	0
	99o	0	100	1,781,743	64,445	155,135	89,275	3,871,747	5,962,445	0
	99n	0	0	0	31	82,814	0	181	83,026	0
* Cyfluthrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	989	890	20	1,899	0
	98o	0	0	0	0	3,496	964	5	4,465	0
	98n	0	0	0	0	15,916	0	0	15,916	0
	99o	0	0	0	0	3,024	1,623	83	4,730	0
	99n	0	0	0	0	13,783	0	0	13,783	0
* Cyhalothrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
*,** 2,4-D (acetic acid)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	29,200	0	0	0	23,780	24,490	27,595	105,065	6,192
	98o	87,757	0	0	11	111,450	59,436	9,964	268,618	1
	98n	0	0	0	0	125,425	0	30,192	155,617	0
	99o	94,815	0	0	0	118,130	63,548	26,173	302,666	0
	99n	0	0	0	0	386,422	164	22,131	408,717	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
533-74-4 *	Dazomet	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	11	1,042	230	0	0	1,272	2,578	3,850
		98o	14	0	0	0	0	0	1,274	1,274
		98n	No reports							
		99o	15	250	450	0	5	705	250	955
		99n	No reports							
53404-60-7 *	Dazomet, sodium salt	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	0	0	0	0	250	250
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
94-82-6 *	2,4-DB	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	750	0	0	0	750	0	750
		98o	2	7	0	0	0	7	0	7
		98n	1	10	0	0	0	10	0	10
		99o	2	17	0	0	0	17	0	17
		99n	No reports							
1929-73-3 **	2,4-D butoxyethyl ester	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	510	0	0	0	510	0	510
		98o	2	255	0	0	0	255	0	255
		98n	No reports							
		99o	3	255	0	0	0	255	0	255
		99n	No reports							
94-80-4 **	2,4-D butyl ester	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	3	0	0	0	3	0	3
		98o	2	1	0	0	0	1	0	1
		98n	No reports							
		99o	2	0	1	0	0	1	0	1
		99n	No reports							
1163-19-5	Decabromodiphenyl oxide	88	58	29,604	500	292	21,450	51,846	555,181	607,027
		95	139	39,283	3,846	11	204,248	247,388	716,245	963,633
		98o	142	31,114	3,168	0	191,253	225,535	710,069	935,604
		98n	1	0	0	0	310,000	310,000	0	310,000
		99o	141	116,239	2,701	0	396,169	515,109	838,696	1,353,805
		99n	2	0	0	0	350,000	350,000	0	350,000
13684-56-5 *	Desmedipham	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	94	0	0	0	94	0	94
		98n	No reports							
		99o	1	62	0	0	0	62	0	62
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Dazomet	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	20,110	1,178	3,542	24,830	0
	98o	0	0	0	0	100	2,100	1,400	3,600	0
	98n	No reports								
	99o	0	0	0	0	13,093	9,803	602	23,498	0
	98n	No reports								
* Dazomet, sodium salt	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	56	7,807	0	7,863	0
	98o	0	0	0	0	73	12,620	90	12,783	0
	98n	No reports								
	99o	0	0	0	0	38	12,165	4	12,207	0
	99n	No reports								
* 2,4-DB	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	217	290	507	0
	98o	0	0	0	0	0	14	7	21	0
	98n	0	0	0	21,140	0	0	10	21,150	1
	99o	0	0	0	0	0	8	17	25	0
	99n	No reports								
*,** 2,4-D butoxyethyl ester	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	1,600	318	1,918	0
	98o	0	0	0	0	0	0	76	76	0
	98n	No reports								
	99o	0	0	0	0	0	0	26	26	0
	99n	No reports								
*,** 2,4-D butyl ester	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	600	0	3	603	0
	98o	0	0	0	0	9,400	0	1	9,401	0
	98n	No reports								
	99o	0	0	0	0	11,000	0	1	11,001	0
	99n	No reports								
Decabromodiphenyl oxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	992,673	144,205	0	18,686	32,138	322,935	947,336	2,457,973	3,805
	98o	264,731	88,843	385	3,214	43,588	257,120	905,470	1,563,351	8
	98n	0	0	0	0	0	0	310,000	310,000	0
	99o	368,187	29,007	6,600	8,732	58,412	419,598	1,314,803	2,205,339	11
	99n	0	0	0	0	29,784	29,784	350,000	409,568	0
* Desmedipham	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	1,150	94	1,244	0
	98n	No reports								
	99o	0	0	0	0	0	691	62	753	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
1928-43-4	*** 2,4-D 2-Ethylhexyl ester	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	11	2,765	250	0	0	3,015	3,131	6,146
		98o	10	4,722	5	0	0	4,727	1,735	6,462
		98n	No reports							
		99o	10	4,672	5	0	0	4,677	927	5,604
2303-16-4	Diallate	99n	No reports							
		88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
615-05-4	** 2,4-Diaminoanisole	99o	No reports							
		99n	3	7	1	0	0	8	170	178
		88	1	0	0	0	0	0	0	0
		95	No reports							
		98o	No reports							
39156-41-7	** 2,4-Diaminoanisole sulfate	98n	No reports							
		99o	No reports							
		99n	No reports							
		88	1	0	0	0	0	0	0	0
		95	No reports							
101-80-4	** 4,4'-Diaminodiphenyl ether	98o	No reports							
		98n	No reports							
		99o	3	169	449	0	0	618	41	659
		99n	No reports							
		88	5	216	585	0	0	801	142	943
95-80-7	** 2,4-Diaminotoluene	95	3	23	359	0	0	382	120	502
		98o	3	22	340	0	0	362	55	417
		98n	No reports							
		99o	2	5	0	0	0	5	54,062	54,067
		99n	4	35	0	0	0	35	774	809
25376-45-8	** Diaminotoluene (mixed isomers)	99o	2	629	0	0	0	629	0	629
		99n	11	10,381	28,633	6,200	14	45,228	15,912	61,140
		88	13	21,097	3,288	174,000	295	198,680	289,591	488,271
		95	11	9,594	5,522	7,050	55	22,221	28,625	50,846
		98o	13	13,523	5,785	13,000	205	32,513	12,531	45,044
25376-45-8	** Diaminotoluene (mixed isomers)	98n	2	10	0	0	0	10	0	10
		99o	11	10,381	28,633	6,200	14	45,228	15,912	61,140
		99n	6	287	1	0	0	288	1,030	1,318
		88	13	21,097	3,288	174,000	295	198,680	289,591	488,271
		95	11	9,594	5,522	7,050	55	22,221	28,625	50,846

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
*,** 2,4-D 2-Ethylhexyl ester	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	36,531	0	0	0	0	10,318	5,468	52,317	0
	98o	7,870	0	0	0	0	14,179	6,334	28,383	0
	98n	No reports								
	99o	13,250	0	0	0	0	9,898	6,150	29,298	0
	99n	No reports								
	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
Diallate	99o	No reports								
	99n	0	0	0	0	176,396	0	175	176,571	0
** 2,4-Diaminoanisole	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
** 2,4-Diaminoanisole sulfate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
** 4,4'-Diaminodiphenyl ether	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	4,929	380,289	377	385,595	0
	98o	0	0	0	0	140	4,483	357	4,980	0
	98n	No reports								
	99o	0	0	0	0	62	138	613	813	0
	99n	No reports								
** 2,4-Diaminotoluene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	7,192	29,774	655	37,621	0
	98o	0	0	0	0	67,020	360	1,953	69,333	0
	98n	0	0	0	0	40,920	162,187	54,065	257,172	0
	99o	0	0	0	0	8,987	0	624	9,611	0
	99n	0	0	0	0	778,686	0	795	779,481	0
** Diaminotoluene (mixed isomers)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	755,917	386,996	362,357	1,923,183	48,109	3,476,562	3,550
	98o	0	0	2,714,193	4,287,968	669,862	1,072,322	44,224	8,788,569	255
	98n	0	0	0	10,092	961,202	0	13	971,307	0
	99o	0	82,392	2,202,232	8,664,291	340,504	853,564	61,864	12,204,847	9
	99n	0	0	0	70,190	1,219,290	2,922	12,470	1,304,872	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
333-41-5 *	Diazinon	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	31	3,245	8	0	0	3,253	1,560	4,813
		98o	29	13,564	11	0	0	13,575	1,955	15,530
		98n	5	15	0	0	0	15	157	172
		99o	32	26,532	13	0	0	26,545	2,326	28,871
		99n	5	15	0	0	0	15	75	90
334-88-3	Diazomethane	88	No reports							
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	1	4	0	0	0	4	0	4
		99n	No reports							
132-64-9	Dibenzofuran	88	110	71,093	1,510	0	9,929	82,532	181,799	264,331
		95	37	18,704	2,843	0	220	21,767	19,824	41,591
		98o	39	93,615	29	0	56,670	150,314	13,304	163,618
		98n	3	615	0	0	0	615	0	615
		99o	36	57,743	20	0	40	57,803	16,835	74,638
		99n	1	4	0	0	0	4	0	4
96-12-8	1,2-Dibromo-3-chloropropane	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	1	0	0	0	0	0	6	6
106-93-4 **	1,2-Dibromoethane	88	34	63,342	1,011	6,882	259	71,494	27,924	99,418
		95	19	12,372	306	0	256	12,934	3	12,937
		98o	12	10,047	6	0	1	10,054	0	10,054
		98n	1	0	0	0	0	0	0	0
		99o	13	9,103	11	0	7	9,121	35,529	44,650
		99n	2	5	1	0	0	6	5	11
124-73-2	Dibromotetrafluoroethane (Halon 2402)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	10	0	0	0	10	0	10
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
84-74-2 *	Dibutyl phthalate	88	126	204,058	14,339	350,000	6,395	574,792	113,068	687,860
		95	126	104,833	3,981	390,000	1,402	500,216	25,991	526,207
		98o	109	33,577	206	210,000	5,480	249,263	25,676	274,939
		98n	62	834	0	0	0	834	560	1,394
		99o	115	35,356	273	290,000	4,224	329,853	41,342	371,195
		99n	68	1,121	6	0	9,421	10,548	9,006	19,554

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Diazinon	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	21,330	0	0	1	66,150	7,596	4,355	99,432	5
	98o	53,095	0	0	0	37,803	33,649	15,018	139,565	3
	98n	0	0	0	0	180,882	4	162	181,048	0
	99o	63,631	0	0	0	86,025	57,255	26,738	233,649	1
	99n	0	97	0	0	295,239	0	80	295,416	0
	Diazomethane									
	88	No reports								
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	0	0	0	0	232	0	4	236	0
	99n	No reports								
Dibenzofuran	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	70,546	25,036	113	176	405,125	1,471	37,508	539,975	13,220
	98o	131,734	4,920	230,475	92,830	26,678	5,981	119,032	611,650	1,302
	98n	0	0	0	1,352,711	32,439	0	615	1,385,765	1
	99o	109,749	1,450	210,545	96,365	31,728	1,887	77,457	529,181	3
	99n	0	0	0	0	77,842	0	4	77,846	0
	1,2-Dibromo-3-chloropropane									
	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	29,000	0	3	29,003	0
*,** 1,2-Dibromoethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,000	0	60	17	34,174	72,467	11,740	123,458	0
	98o	0	0	0	8,701	17,054	863	9,899	36,517	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	120,000	22,252	58,073	9,226	209,551	792
	99n	0	0	0	0	84,312	0	7	84,319	0
	Dibromotetrafluoroethane (Halon 2402)									
	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	127,308	0	0	0	0	0	10	127,318	0
	98n	No reports								
	99o	130,692	0	0	0	0	0	0	130,692	0
	99n	No reports								
* Dibutyl phthalate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	51,458	26,123	1,086,538	172,397	314,761	115,699	386,156	2,153,132	173,706
	98o	30,100	12,207	1,028,453	215,856	177,719	95,702	280,203	1,840,240	4
	98n	0	0	0	288,896	89,847	1,697	668	381,108	6
	99o	27,111	5,499	913,586	195,636	318,148	161,391	385,306	2,006,677	85
	99n	17,911	0	0	24,730	355,078	12,444	15,094	425,257	461

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
1918-00-9 *	Dicamba	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	6	12,580	250	113,600	0	126,430	0	126,430
		98o	9	1,207	59	32,000	0	33,266	2,100	35,366
		98n	2	10	0	0	0	10	77	87
		99o	13	1,259	37	18,600	0	19,896	140	20,036
		99n	2	2	0	0	0	2	87	89
99-30-9 *	Dichloran	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	10	0	0	0	10	0	10
		98o	3	0	0	0	0	0	0	0
		98n	1	0	0	0	0	0	0	0
		99o	3	0	0	0	0	0	0	0
		99n	1	0	0	0	0	0	0	0
95-50-1 *	1,2-Dichlorobenzene	88	45	530,535	11,624	20,000	13,354	575,513	38,266	613,779
		95	28	271,539	3,789	26,000	11,521	312,849	28,228	341,077
		98o	36	208,463	2,352	3,800	1,245	215,860	6,076	221,936
		98n	10	1,036	5	5	0	1,046	610	1,656
		99o	35	308,537	2,069	2,500	475	313,581	7,920	321,501
		99n	10	1,741	1	0	65,593	67,335	1,566	68,901
541-73-1	1,3-Dichlorobenzene	88	6	15,282	1,281	0	0	16,563	290	16,853
		95	6	7,528	526	0	0	8,054	0	8,054
		98o	6	4,018	203	0	0	4,221	0	4,221
		98n	2	5	0	0	0	5	0	5
		99o	8	3,640	807	0	0	4,447	0	4,447
		99n	2	9	1	0	0	10	30	40
106-46-7 **	1,4-Dichlorobenzene	88	24	1,891,419	6,153	4,000	1,300	1,902,872	750	1,903,622
		95	24	242,372	1,287	0	3,100	246,759	3,328	250,087
		98o	19	181,899	1,706	3,100	460	187,165	0	187,165
		98n	11	417	0	0	0	417	81	498
		99o	23	178,210	1,880	7,300	1,370	188,760	0	188,760
		99n	6	44	1	0	0	45	18	63
25321-22-6 **	Dichlorobenzene (mixed isomers)	88	15	163,684	40	0	0	163,724	19,672	183,396
		95	9	5,443	0	0	0	5,443	9	5,452
		98o	6	14,218	0	0	0	14,218	8	14,226
		98n	8	319	250	0	0	569	1,498	2,067
		99o	5	13,796	0	0	0	13,796	0	13,796
		99n	7	52	0	0	0	52	357	409
91-94-1 **	3,3'-Dichlorobenzidine	88	14	255	752	0	0	1,007	209,785	210,792
		95	3	11	0	0	0	11	2,400	2,411
		98o	1	255	0	0	0	255	41,600	41,855
		98n	3	6	0	0	0	6	0	6
		99o	2	15	0	0	0	15	44,145	44,160
		99n	4	5	0	0	0	5	161	166

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Dicamba	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	510	0	0	0	0	29	126,662	127,201	0
	98o	0	0	0	0	37,557	65,900	35,366	138,823	0
	98n	0	0	0	0	22,223	0	87	22,310	0
	99o	0	0	0	0	39,143	42,080	20,039	101,262	0
	99n	0	0	0	0	27,830	0	90	27,920	0
* Dichloran	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	50	25	10	85	0
	98o	0	0	0	0	0	0	0	0	0
	98n	0	0	0	0	39,948	0	0	39,948	0
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	55,619	0	0	55,619	0
* 1,2-Dichlorobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,527,161	3,626,496	354,610	763,438	172,717	1,999,033	340,963	12,784,418	153
	98o	11,995,819	2,222,086	1,395,535	513,369	374,719	973,511	216,633	17,691,672	62
	98n	2,230,878	0	159	42,595	653,679	4,239,558	1,443	7,168,312	3
	99o	11,893,164	1,378,067	3,964,034	546,751	713,178	1,496,579	327,728	20,319,501	259
	99n	1,705,966	0	412	43,256	1,303,837	314,609	67,005	3,435,085	53
1,3-Dichlorobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,068	1,291	0	0	10	3,989	8,079	18,437	36
	98o	1,988	950	0	0	10	2,555	4,260	9,763	1
	98n	0	0	0	0	20,077	202	1	20,280	1
	99o	2,129	930	68,399	0	20,895	3,169	4,439	99,961	6
	99n	0	0	0	0	247,556	0	37	247,593	0
*,** 1,4-Dichlorobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	705,345	34,882	42,157	11,053	73,030	621,194	248,721	1,736,382	1,609
	98o	2,602,061	0	134,272	6,691	1,766	299,525	185,980	3,230,295	110
	98n	36,560	0	1	149,250	376,335	1,350	256	563,752	2
	99o	1,927,605	0	416,356	2,702	18,350	390,802	188,336	2,944,151	49,306
	99n	28,229	0	0	8,306	658,480	1	48	695,064	5
** Dichlorobenzene (mixed isomers)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	266,997	5,165	79,032	3,684	5,452	360,330	0
	98o	0	0	191,010	611	248,100	6,720	14,226	460,667	0
	98n	0	4,724	2,147	712,291	321,134	328	1,849	1,042,473	1
	99o	0	0	1,567,000	0	1	13,402	13,796	1,594,199	0
	99n	0	0	613	665,533	207,957	0	154	874,257	11
** 3,3'-Dichlorobenzidine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	22,000	14,000	1,600	2,701	40,301	1
	98o	0	0	0	0	10,000	45,000	42,000	97,000	0
	98n	0	0	0	0	65,021	63	2	65,086	1
	99o	0	0	0	0	11,787	64,065	44,001	119,853	1
	99n	0	0	0	0	237,063	0	163	237,226	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
612-83-9 **	3,3'-Dichlorobenzidine dihydrochloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	13	0	0	0	0	0	0	0
		98o	16	250	5	0	0	255	6,790	7,045
		98n	No reports							
		99o	16	7	5	0	0	12	3,400	3,412
		99n	No reports							
64969-34-2 **	3,3'-Dichlorobenzidine sulfate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	260	260
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
75-27-4	Dichlorobromomethane	88	1	13,440	0	0	0	13,440	0	13,440
		95	1	2,300	0	0	50	2,350	0	2,350
		98o	1	2,370	0	0	90	2,460	0	2,460
		98n	No reports							
		99o	2	3,405	0	0	80	3,485	0	3,485
		99n	No reports							
764-41-0	1,4-Dichloro-2-butene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	3,950	0	4,500	0	8,450	0	8,450
		98o	3	1,713	0	5,700	0	7,413	0	7,413
		98n	1	0	0	0	0	0	0	0
		99o	3	910	0	1,200	0	2,110	0	2,110
		99n	1	26	1	0	0	27	4	31
110-57-6	trans-1,4-Dichloro-2-butene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	137	0	0	0	137	0	137
		98o	1	1	0	0	0	1	0	1
		98n	No reports							
		99o	1	1	0	0	0	1	0	1
		99n	2	255	0	0	0	255	158	413
1649-08-7	1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	890	20	0	0	910	89	999
		98o	2	837	48	0	0	885	0	885
		98n	1	5	0	0	0	5	0	5
		99o	2	17,310	45	0	0	17,355	0	17,355
		99n	1	10	0	0	0	10	5	15
75-71-8 *	Dichlorodifluoromethane (CFC-12)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	137	3,249,946	17,172	89	0	3,267,207	320	3,267,527
		98o	55	722,844	13,005	0	0	735,849	0	735,849
		98n	5	24,607	0	250	0	24,857	107	24,964
		99o	45	716,249	5	0	0	716,254	0	716,254
		99n	5	18,579	1	0	0	18,580	32	18,612

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** 3,3'-Dichlorobenzidine dihydrochloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	12,797	22,000	0	34,797	0
	98o	0	0	0	0	6,716	48,000	6,801	61,517	0
	98n	No reports								
	99o	0	0	0	0	4,644	85,002	3,402	93,048	0
	99n	No reports								
** 3,3'-Dichlorobenzidine sulfate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1,300	2,400	0	3,700	0
	98o	0	0	0	0	0	6,000	260	6,260	0
	98n	No reports								
	99o	0	0	0	0	0	12,000	0	12,000	0
	99n	No reports								
Dichlorobromomethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	2,300	2,300	0
	98o	0	0	0	0	0	0	2,400	2,400	0
	98n	No reports								
	99o	0	0	0	0	470	4	3,501	3,975	1
	99n	No reports								
1,4-Dichloro-2-butene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	13,000	3,300,000	312,500	8,450	3,633,950	0
	98o	1,800,000	0	0	0	3,753,000	124,000	7,413	5,684,413	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	5,800,000	13,390	2,110	5,815,500	0
	99n	0	0	0	0	60,000	0	26	60,026	0
trans-1,4-Dichloro-2-butene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	137	137	0
	98o	0	0	0	0	12,000	0	1	12,001	0
	98n	No reports								
	99o	0	0	0	0	13,000	0	1	13,001	0
	99n	0	0	0	0	129,737	0	205	129,942	0
1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	98,000	22,000	1,000	121,000	0
	98o	0	0	0	0	320,000	61,573	880	382,453	0
	98n	0	0	0	0	39,584	0	3	39,587	0
	99o	0	0	0	0	370,000	91,532	17,010	478,542	0
	99n	0	0	0	0	27,318	0	2	27,320	0
* Dichlorodifluoromethane (CFC-12)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	552,377	466,714	408,747	225	126,167	114,628	3,241,865	4,910,723	18,435
	98o	80,253	213,260	0	0	38,976	67,036	738,467	1,137,992	4
	98n	0	0	0	0	199,704	8	24,723	224,435	0
	99o	246,309	178,692	0	0	170	132,003	657,567	1,214,741	10,654
	99n	0	0	0	0	292,534	135	18,607	311,276	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
107-06-2	*** 1,2-Dichloroethane	88	110	4,615,179	40,527	1,452,084	2,166	6,109,956	166,131	6,276,087
		95	83	1,292,842	5,194	24,339	256	1,322,631	23,671	1,346,302
		98o	71	708,117	2,337	2,178	886	713,518	105,862	819,380
		98n	19	284	271	56,816	0	57,371	23,011	80,382
		99o	72	545,225	833	1,171	2,983	550,212	666,493	1,216,705
		99n	16	814	71	64,294	0	65,179	2,299	67,478
540-59-0	1,2-Dichloroethylene	88	10	126,478	95	0	1	126,574	87,614	214,188
		95	10	8,527	270	0	0	8,797	0	8,797
		98o	11	5,383	44	0	0	5,427	0	5,427
		98n	7	533	0	0	0	533	387	920
		99o	9	4,901	390	0	0	5,291	0	5,291
		99n	8	1,539	1	0	0	1,540	13,282	14,822
1717-00-6	1,1-Dichloro-1-fluoroethane (HCFC-141b)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	296	11,677,933	580	26	35,767	11,714,306	165,777	11,880,083
		98o	232	8,908,815	54	0	33,556	8,942,425	230,925	9,173,350
		98n	11	31,419	0	0	0	31,419	1,096	32,515
		99o	223	7,807,666	419	0	20,128	7,828,213	278,640	8,106,853
		99n	11	23,516	0	0	0	23,516	1,662	25,178
75-43-4	Dichlorofluoromethane (HCFC-21)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	173,117	2	0	0	173,119	31,000	204,119
		98o	3	129,467	0	0	0	129,467	8,975	138,442
		98n	4	4	0	0	0	4	9	13
		99o	3	105,565	0	0	0	105,565	10,910	116,475
		99n	2	5	0	0	75,231	75,236	0	75,236
75-09-2	*** Dichloromethane	88	1,675	129,124,529	349,960	1,478,833	157,156	131,110,478	7,806,328	138,916,806
		95	1,012	58,305,923	28,620	1,140,335	2,064	59,476,942	180,137	59,657,079
		98o	642	40,302,462	15,492	456,962	173,592	40,948,508	262,922	41,211,430
		98n	198	469,904	262	33,702	10,127	513,995	99,836	613,831
		99o	531	35,556,474	12,056	107,386	8,344	35,684,260	153,884	35,838,144
		99n	161	220,397	16	59,473	53,605	333,491	383,828	717,319
127564-92-5	Dichloropentafluoropropane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	6,520	0	0	0	6,520	8,900	15,420
		98n	No reports							
		99o	1	9,890	0	0	0	9,890	4,600	14,490
		99n	No reports							
507-55-1	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	255	0	0	0	255	0	255
		98o	2	34,043	0	0	0	34,043	0	34,043
		98n	1	1,000	0	0	0	1,000	0	1,000
		99o	3	77,310	0	0	0	77,310	0	77,310
		99n	1	1,000	0	0	0	1,000	0	1,000

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
*** 1,2-Dichloroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	59,314,824	16,921,135	32,535,232	787,622	74,650,467	1,630,158	1,325,188	187,164,626	23,301
	98o	435,903,074	11,350,396	49,197,699	194,842	59,612,529	1,892,410	833,090	558,984,040	69,871
	98n	0	0	2,617	338	1,389,729	4,384	59,112	1,456,180	8
	99o	397,977,917	14,982,020	35,619,138	266,614	75,760,698	2,137,851	1,072,904	527,817,142	11,341
	99n	213	0	1,707	47,058	3,251,128	144,444	68,188	3,512,738	0
1,2-Dichloroethylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	310,000	6,100	2,871,400	0	4,680,089	1,984	8,761	7,878,334	122
	98o	1,560,000	1,617,199	621,000	0	3,946,600	2,803	5,304	7,752,906	143
	98n	0	0	0	0	1,163,150	0	631	1,163,781	0
	99o	4,250,000	1,463,455	313,000	0	14,301,329	7,070	7,511	20,342,365	121
	99n	255,988	0	0	411,928	1,745,805	165	1,279	2,415,165	10
1,1-Dichloro-1-fluoroethane (HCFC-141b)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,429,772	381,393	0	99,548	2,018,829	846,290	11,819,111	20,594,943	38,962
	98o	155,007	147,221	0	647,826	801,429	418,974	8,960,363	11,130,820	75,875
	98n	357,028	3,660	0	148	271,622	4,671	32,162	669,291	0
	99o	176,231	186,250	0	742,001	993,727	843,360	8,029,685	10,971,254	9
	99n	274,970	4,238	0	1,379	238,799	31,708	22,740	573,834	0
Dichlorofluoromethane (HCFC-21)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	7,200	1,586	23,800	204,492	237,078	0
	98o	0	0	0	0	0	5,487	138,067	143,554	0
	98n	0	0	0	0	288,607	183	13	288,803	1
	99o	0	0	0	0	16,463	365	116,561	133,389	1
	99n	0	0	0	0	21,850	0	75,234	97,084	0
*** Dichloromethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	84,723,606	14,116,539	5,240,223	3,234,456	25,614,610	11,966,476	59,554,639	204,450,549	72,752
	98o	136,285,791	15,127,026	8,885,675	3,028,379	26,836,797	14,262,405	41,190,460	245,616,533	102,531
	98n	18,334,527	2,100,136	728	5,293,429	2,646,686	7,338,183	555,330	36,269,019	271
	99o	149,782,371	11,326,297	7,937,093	4,696,123	455,912,875	15,172,393	35,464,508	680,291,660	700,444
	99n	10,243,603	1,252,643	2,351	10,060,265	5,050,496	5,186,404	490,264	32,286,026	5,564
Dichloropentafluoropropane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	8,900	6,500	15,400	0
	98n	No reports								
	99o	0	0	0	0	0	4,600	9,900	14,500	0
	99n	No reports								
1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	100	0	0	0	0	0	400	500	0
	98o	4,337	0	0	0	0	0	34,043	38,380	0
	98n	0	500	0	0	0	0	1,275	1,775	0
	99o	40,085	0	0	390	0	1,700	77,310	119,485	7,000
	99n	0	450	0	0	0	0	850	1,300	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
422-56-0	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	255	0	0	0	255	0	255
		98o	3	56,258	0	0	0	56,258	0	56,258
		98n	1	1,000	0	0	0	1,000	0	1,000
		99o	2	35,012	0	0	0	35,012	0	35,012
		99n	1	1,000	0	0	0	1,000	0	1,000
120-83-2	2,4-Dichlorophenol	88	8	1,403	107	17,700	2	19,212	350	19,562
		95	3	3,580	245	15,900	0	19,725	0	19,725
		98o	5	490	0	9,000	0	9,490	0	9,490
		98n	3	108	0	0	0	108	0	108
		99o	4	465	30	9,700	1	10,196	0	10,196
		99n	3	57	1	0	0	58	19	77
78-87-5	* 1,2-Dichloropropane	88	12	1,395,304	23,785	0	3,400	1,422,489	1,131	1,423,620
		95	11	616,470	4,344	0	20	620,834	1,371	622,205
		98o	11	298,150	1,122	0	32	299,304	267	299,571
		98n	4	8	0	0	0	8	0	8
		99o	11	249,656	9,242	0	30	258,928	6,856	265,784
		99n	4	23	1	0	0	24	13	37
10061-02-6	** trans-1,3-Dichloropropene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	256	0	0	0	256	0	256
		98o	3	1,670	0	0	1	1,671	0	1,671
		98n	1	70	0	0	0	70	0	70
		99o	6	512	0	0	0	512	0	512
		99n	1	85	0	0	0	85	0	85
78-88-6	* 2,3-Dichloropropene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	4,253	0	0	0	4,253	0	4,253
		98o	5	612	490	0	0	1,102	1,200	2,302
		98n	1	32	0	0	0	32	0	32
		99o	5	357	900	0	0	1,257	0	1,257
		99n	No reports							
542-75-6	*** 1,3-Dichloropropylene	88	8	54,590	250	0	0	54,840	0	54,840
		95	11	32,977	193	0	0	33,170	0	33,170
		98o	12	11,139	61	0	1	11,201	0	11,201
		98n	6	427	0	0	0	427	0	427
		99o	14	6,111	67	0	0	6,178	0	6,178
		99n	6	489	1	0	0	490	168	658
76-14-2	* Dichlorotetrafluoroethane (CFC-114)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	20	1,017,652	4,936	0	0	1,022,588	136	1,022,724
		98o	13	827,113	5	0	0	827,118	1	827,119
		98n	No reports							
		99o	12	930,592	5	0	0	930,597	0	930,597
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	60	0	0	0	0	0	300	360	0
	98o	3,851	0	0	0	0	0	56,558	60,409	5,700
	98n	0	410	0	0	0	0	1,040	1,450	0
	99o	32,023	0	0	400	0	1,400	35,013	68,836	0
	99n	0	365	0	0	0	0	1,040	1,405	0
2,4-Dichlorophenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,460	0	3	0	336,936	0	19,720	358,119	0
	98o	1,400	0	3	0	190,400	600	9,435	201,838	0
	98n	0	0	0	48,026	25,817	0	108	73,951	0
	99o	1,100	0	0	0	216,300	0	10,141	227,541	0
	99n	0	0	0	8,497	115,864	181	74	124,616	0
* 1,2-Dichloropropane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	56,000,000	0	28,380,000	0	11,573,182	7,768	620,353	96,581,303	1,200
	98o	26,800,000	0	10,700,000	0	15,610,350	1,161,416	301,901	54,573,667	10
	98n	0	0	0	0	689,377	22	4	689,403	1
	99o	9,200,000	0	5,109,000	2	22,414,813	3,604,795	260,892	40,589,502	11
	99n	0	0	0	0	347,173	0	35	347,208	0
** trans-1,3-Dichloropropene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	11,000,000	0	0	0	250	11,000,250	1
	98o	7,900	0	5,210,238	9	20,505	430	1,640	5,240,722	0
	98n	0	0	0	0	0	0	70	70	0
	99o	50,000	0	0	180	6,845,015	242	510	6,895,947	1
	99n	0	0	0	0	0	0	85	85	0
* 2,3-Dichloropropene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	6,100,000	1	4,200,000	0	1,960,000	510,000	4,253	12,774,254	0
	98o	960,000	0	1,100,000	0	639,000	1,086,000	1,102	3,786,102	0
	98n	0	0	0	0	73,306	0	32	73,338	0
	99o	2,300,000	0	0	0	3,670,000	410,000	1,290	6,381,290	0
	99n	No reports								
*** 1,3-Dichloropropylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,892,986	470	11,930,000	123	969,916	2,481	33,404	17,829,380	241
	98o	1,932,000	0	6,000,000	16,645	1,084,262	42,734	10,800	9,086,441	1
	98n	0	0	0	14,109	89,306	80	427	103,922	0
	99o	870,000	0	0	26,166	890,170	120,870	8,687	1,915,893	0
	99n	0	0	0	0	296,500	20	653	297,173	0
* Dichlorotetrafluoroethane (CFC-114)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	19,819	14,634	0	0	1,608,479	38,271	1,018,687	2,699,890	1
	98o	231,484	17,299	0	0	1,022,895	34,717	827,120	2,133,515	0
	98n	No reports								
	99o	195,012	13,065	0	0	38,821	124,763	915,638	1,287,299	18,960
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
34077-87-7	Dichlorotrifluoroethane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	1,000	0	0	0	1,000	0	1,000
		98o	1	1,699	0	0	0	1,699	0	1,699
		98n	1	5	0	0	0	5	2	7
		99o	No reports							
		99n	1	12	0	0	0	12	2	14
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	101,118	5	0	0	101,123	0	101,123
		98n	No reports							
		99o	1	107,479	5	0	0	107,484	0	107,484
		99n	No reports							
306-83-2	2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	12	155,006	251	0	0	155,257	0	155,257
		98o	13	206,073	10	0	0	206,083	0	206,083
		98n	3	457	0	0	0	457	226	683
		99o	10	86,172	5	0	0	86,177	0	86,177
		99n	2	977	0	0	0	977	0	977
62-73-7	*,** Dichlorvos	88	7	1,050	0	0	0	1,050	505	1,555
		95	4	255	5	0	0	260	250	510
		98o	4	255	5	0	0	260	0	260
		98n	1	0	0	0	0	0	9	9
		99o	4	255	5	0	0	260	0	260
		99n	2	3	1	0	0	4	5	9
115-32-2	* Dicofol	88	8	1,343	0	0	0	1,343	15,786	17,129
		95	4	750	0	0	0	750	250	1,000
		98o	4	1,000	0	0	0	1,000	0	1,000
		98n	No reports							
		99o	5	1,008	0	0	0	1,008	0	1,008
		99n	1	3	0	0	0	3	0	3
77-73-6	Dicyclopentadiene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	71	340,455	5,464	0	475	346,394	6,888	353,282
		98o	85	350,062	14,943	0	597	365,602	6,162	371,764
		98n	3	15	0	1,081,201	0	1,081,216	0	1,081,216
		99o	91	350,645	11,817	0	10	362,472	2,906	365,378
		99n	5	281	1	973,928	0	974,210	256	974,466
1464-53-5	Diepoxybutane	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	70	0	0	0	70	0	70
		99o	No reports							
		99n	1	0	0	0	0	0	0	0

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Dichlorotrifluoroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	716,409	0	968	717,377	0
	98o	0	0	0	0	35,000	0	1,699	36,699	0
	98n	0	0	0	0	29,974	0	7	29,981	0
	99o	No reports								
	99n	0	0	0	0	47,879	0	14	47,893	0
1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	0	101,123	101,123	0
	98n	No reports								
	99o	0	0	0	0	0	0	107,484	107,484	0
	99n	No reports								
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	253,000	1,304	0	0	18,400	24,465	155,218	452,387	0
	98o	0	0	0	0	38,337	4,901	204,475	247,713	955
	98n	0	0	0	0	32,848	0	683	33,531	0
	99o	0	0	0	0	25,641	11,761	85,822	123,224	1
	99n	0	0	0	0	0	0	977	977	0
*,** Dichlorvos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	33	0	0	297	10	536	550	1,426	24
	98o	0	0	0	0	11	1,130	508	1,649	0
	98n	0	0	0	0	14,957	0	9	14,966	0
	99o	0	0	0	0	14	1,984	260	2,258	0
	99n	0	97	0	0	26,895	0	5	26,997	0
* Dicofol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	150	0	0	0	0	95	282	527	0
	98o	0	0	0	0	0	895	229	1,124	0
	98n	No reports								
	99o	148	0	0	0	0	1,166	131	1,445	0
	99n	0	0	0	0	28,375	0	3	28,378	0
Dicyclopentadiene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	514,277	128,273	1,782,272	635,023	471,016	201,368	348,234	4,080,463	309
	98o	457,481	43,182	1,055,862	790,262	535,711	226,565	401,577	3,510,640	7,573
	98n	0	0	0	0	22,604	0	1,081,217	1,103,821	0
	99o	341,739	20,448	4,454,966	684,673	713,953	93,130	370,793	6,679,702	3,509
	99n	0	0	0	333,931	459,410	0	974,025	1,767,366	0
Diepoxybutane	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	148,733	0	0	70	148,803	1
	99o	No reports								
	99n	0	0	0	0	11,634	0	0	11,634	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
111-42-2	Diethanolamine	88	333	642,418	438,213	238,317	133,456	1,452,404	376,037	1,828,441
		95	350	369,625	287,582	18,502	40,399	716,108	456,391	1,172,499
		98o	331	436,529	63,158	24,000	113,340	637,027	208,501	845,528
		98n	99	2,761	0	316,517	169,345	488,623	3,653	492,276
		99o	318	373,698	35,086	26,905	79,789	515,478	204,144	719,622
		99n	96	531	0	327,701	65,000	393,232	2,694	395,926
117-81-7	*,** Di(2-ethylhexyl) phthalate	88	304	1,217,329	2,781	3,091	20,748	1,243,949	3,630,612	4,874,561
		95	318	504,167	921	0	19,705	524,793	3,041,389	3,566,182
		98o	302	215,583	669	0	24,184	240,436	1,114,867	1,355,303
		98n	59	1,986	0	0	0	1,986	1,798	3,784
		99o	285	226,926	2,629	0	4,685	234,240	916,774	1,151,014
		99n	66	960	251	0	27,649	28,860	9,247	38,107
64-67-5	** Diethyl sulfate	88	24	10,627	0	0	250	10,877	0	10,877
		95	31	6,978	0	0	0	6,978	250	7,228
		98o	33	6,188	0	0	0	6,188	177	6,365
		98n	2	0	0	0	0	0	0	0
		99o	29	3,727	0	0	0	3,727	34,518	38,245
		99n	2	10	0	0	0	10	0	10
35367-38-5	* Diflubenzuron	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
101-90-6	** Diglycidyl resorcinol ether	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	2	20	0	0	0	20	0	20
		98n	1	0	0	0	0	0	0	0
		99o	2	20	0	0	0	20	0	20
		99n	1	0	0	0	0	0	0	0
94-58-6	** Dihydrosafrole	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	255	0	0	0	255	0	255
		98o	4	12,018	0	0	0	12,018	0	12,018
		98n	1	0	0	0	0	0	0	0
		99o	3	268	0	0	0	268	0	268
		99n	3	5	0	0	0	5	167	172
—	Diisocyanates	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1,096	502,504	1,370	0	31,977	535,851	598,995	1,134,846
		98o	1,362	539,718	28	0	158,920	698,666	1,266,323	1,964,989
		98n	17	750	0	0	900,000	900,750	2,760	903,510
		99o	1,361	354,597	21	0	198,911	553,529	1,182,951	1,736,480
		99n	19	365	1	0	514,005	514,371	10,687	525,058

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Diethanolamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	23,518	160,987	102,766	732,863	2,828,593	1,617,435	1,137,284	6,603,446	25,357
	98o	3	289,382	280,874	119,918	2,935,508	2,570,010	2,592,385	8,788,080	86
	98n	311,138	62,678	0	636,227	21,411	23,223	495,252	1,549,929	4
	99o	0	72,617	509,443	354,310	2,798,392	1,477,487	1,093,650	6,305,899	55,485
	99n	0	5	0	34,183	32,523	14,749	395,455	476,915	3
*,** Di(2-ethylhexyl) phthalate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,644,796	4,057,967	116,013	258,725	557,557	357,115	3,676,763	11,668,936	365
	98o	4,985,166	1,879,565	464,843	222,093	403,536	260,191	1,090,724	9,306,118	574
	98n	0	0	0	1,452,492	0	2,318	1,614	1,456,424	1
	99o	3,843,690	3,106,109	344,691	193,711	244,510	180,691	1,080,324	8,993,726	7,050
	99n	0	0	0	9,101	179,924	1,961	33,064	224,050	3,118
** Diethyl sulfate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	6,400,000	0	415	3,370	4,702	7,131	6,415,618	2
	98o	0	0	0	6,887,586	4,488	2,460	6,508	6,901,042	5
	98n	0	0	0	50	1	50	1	102	0
	99o	0	0	0	7,659,130	3,704	459	42,667	7,705,960	0
	99n	0	0	0	1,780	1	0	1	1,782	0
* Diflubenuron	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
** Diglycidyl resorcinol ether	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	300	0	0	6	306	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	1,100	0	0	6	1,106	0
	99n	0	0	0	0	0	0	0	0	0
** Dihydrosafrole	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	10	999	0	1,009	0
	98o	0	0	0	0	0	10	12,028	12,038	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	0	10	78	88	0
	99n	0	0	0	0	189,324	0	171	189,495	0
Diisocyanates	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	816,798	343,867	143,840	343,308	710,457	1,182,587	1,088,763	4,629,620	4,204
	98o	1,352,830	493,865	573,125	608,093	1,919,545	1,567,728	1,575,017	8,090,203	9,947
	98n	0	0	0	1,352,236	1,247,948	782	903,028	3,503,994	1
	99o	112,052	511,409	125,596	549,395	2,045,507	1,678,188	1,650,688	6,672,835	20,436
	99n	0	0	0	0	4,229,041	970	527,146	4,757,157	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
55290-64-7 *	Dimethipin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
60-51-5 *	Dimethoate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	270	5	0	250	525	1,500	2,025
		98o	6	42	5	0	19,975	20,022	0	20,022
		98n	2	15	0	0	0	15	69	84
		99o	5	27	5	0	0	32	0	32
		99n	4	24	0	0	0	24	177	201
119-90-4	3,3'-Dimethoxybenzidine	88	No reports							
		95	3	0	0	0	0	0	0	0
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	7	1	0	0	8	162	170
20325-40-0 **	3,3'-Dimethoxybenzidine dihydrochloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	10	0	0	0	10	0	10
		98o	7	0	0	0	0	0	0	0
		98n	No reports							
		99o	8	12	220	0	0	232	0	232
		99n	No reports							
124-40-3	Dimethylamine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	71	453,915	26,490	45,250	3,140	528,795	38,146	566,941
		98o	75	443,982	35,629	11,250	3,788	494,649	119	494,768
		98n	5	892	0	0	0	892	8	900
		99o	73	414,435	30,068	11,250	2,735	458,488	18	458,506
		99n	7	567	1	0	0	568	422	990
2300-66-5 *	Dimethylamine dicamba	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	505	0	0	0	505	154	659
		98o	3	250	0	0	0	250	0	250
		98n	No reports							
		99o	5	250	0	0	0	250	0	250
		99n	No reports							
121-69-7	N,N-Dimethylaniline	88	20	98,905	19,967	0	250	119,122	772	119,894
		95	21	36,932	388	0	0	37,320	465	37,785
		98o	21	32,294	850	0	0	33,144	7,523	40,667
		98n	1	0	0	0	0	0	0	0
		99o	21	27,624	349	0	0	27,973	2,577	30,550
		99n	3	5	0	0	0	5	167	172

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Dimethipin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Dimethoate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	200	0	0	0	0	242	1,900	2,342	0
	98o	433	0	0	0	0	4,105	27,957	32,495	0
	98n	0	0	0	0	63,138	0	84	63,222	0
	99o	0	0	0	0	0	8,691	4,865	13,556	1
	99n	0	0	0	0	210,152	0	202	210,354	0
3,3'-Dimethoxybenzidine	88	No reports								
	95	0	0	0	0	0	0	0	0	0
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	178,511	0	164	178,675	0
** 3,3'-Dimethoxybenzidine dihydrochloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	50	1	10	61	0
	98o	0	0	0	0	15	0	0	15	0
	98n	No reports								
	99o	0	0	0	0	1,115	0	232	1,347	0
	99n	No reports								
Dimethylamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,095,202	0	21,170	1,800	2,157,170	224,513	564,664	4,064,519	4
	98o	574,603	0	28,500	1,600	3,739,186	450,423	494,037	5,288,349	66
	98n	0	0	0	149,823	231,726	50	1,199	382,798	1
	99o	716,804	0	8,510	6,127	2,885,224	537,560	461,481	4,615,706	78
	99n	0	0	0	0	432,882	750	1,228	434,860	0
* Dimethylamine dicamba	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	7,981	0	0	0	0	0	803	8,784	0
	98o	0	0	0	0	0	0	88	88	0
	98n	No reports								
	99o	0	0	0	0	0	0	32	32	0
	99n	No reports								
N,N-Dimethylaniline	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	50,535	0	0	745,242	12,768	201,372	107,732	1,117,649	2
	98o	46,000	21,000	0	807,221	19,620	166,522	31,090	1,091,453	2
	98n	0	0	0	0	0	0	0	0	0
	99o	52,678	19,000	33,536	703,600	23,751	167,707	27,833	1,028,105	4
	99n	0	0	0	0	148,990	0	172	149,162	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
119-93-7	3,3'-Dimethylbenzidine	88	No reports							
		95	No reports							
		98o	No reports							
		98n	2	10	0	0	0	10	0	10
		99o	No reports							
		99n	4	17	1	0	0	18	171	189
79-44-7	Dimethylcarbamyl chloride	88	No reports							
		95	No reports							
		98o	1	98	0	0	0	98	0	98
		98n	1	0	0	0	0	0	0	0
		99o	1	90	0	0	0	90	0	90
		99n	3	9	1	0	0	10	173	183
2524-03-0	Dimethyl chlorothiophosphate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	10	0	51,677	20	51,707	0	51,707
		98o	3	77	0	4,300	0	4,377	0	4,377
		98n	No reports							
		99o	No reports							
		99n	1	2	1	0	0	3	4	7
68-12-2	*** N,N-Dimethylformamide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	143	2,352,993	73,106	1,099,000	1,710	3,526,809	286,326	3,813,135
		98o	169	987,602	43,057	272,325	14,976	1,317,960	693,504	2,011,464
		98n	46	4,480	0	11,857	0	16,337	720	17,057
		99o	169	768,838	28,303	127,125	5	924,271	766,430	1,690,701
		99n	41	9,977	1	0	0	9,978	85,371	95,349
57-14-7	*** 1,1-Dimethyl hydrazine	88	4	4,323	10	0	0	4,333	8,855	13,188
		95	4	299	0	0	0	299	5	304
		98o	4	496	0	0	0	496	0	496
		98n	1	0	0	0	0	0	0	0
		99o	4	408	0	0	0	408	7	415
		99n	3	25	1	0	0	26	557	583
105-67-9	* 2,4-Dimethylphenol	88	13	11,588	484	24,703	399	37,174	1,500	38,674
		95	19	52,797	33	79,000	5	131,835	17	131,852
		98o	25	36,023	56	187,076	0	223,155	1,177	224,332
		98n	3	2	0	0	0	2	0	2
		99o	26	31,402	122	156,587	0	188,111	2,202	190,313
		99n	4	37	1	5	0	43	14	57
131-11-3	* Dimethyl phthalate	88	57	535,056	4,335	390	504	540,285	93,358	633,643
		95	89	375,121	275	1,000	5	376,401	2,524	378,925
		98o	99	263,736	627	2,950	825	268,138	35,211	303,349
		98n	24	259	0	0	0	259	2,077	2,336
		99o	95	432,199	805	1,900	7,356	442,260	32,484	474,744
		99n	19	78	1	0	7,658	7,737	6,384	14,121

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
3,3'-Dimethylbenzidine	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	505	48,005	0	5	48,515	0
	99o	No reports								
	99n	0	0	0	0	207,475	146	173	207,794	0
Dimethylcarbaryl chloride	88	No reports								
	95	No reports								
	98o	0	0	0	0	27,113	0	98	27,211	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	42,084	0	90	42,174	0
	99n	0	0	0	0	205,715	0	181	205,896	0
Dimethyl chlorothiophosphate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	51,727	51,727	0
	98o	0	0	0	0	1,960	0	4,331	6,291	0
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	16,000	0	1	16,001	0
*,** N,N-Dimethylformamide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,738,418	389,337	8,565,430	3,642,854	14,738,051	3,084,481	3,689,071	38,847,642	246
	98o	9,700,653	260,139	9,778,803	7,673,464	13,669,610	5,171,667	2,185,829	48,440,165	1,455
	98n	346,389	91	0	688,975	345,236	36,877	21,389	1,438,957	2
	99o	8,526,815	190,989	11,042,710	9,593,945	12,205,473	5,281,729	2,242,239	49,083,900	2,069
	99n	255,227	68	0	3,143,031	773,294	3,243,649	81,767	7,497,036	3
*,** 1,1-Dimethyl hydrazine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	57	0	0	3,639	10	302	4,008	0
	98o	0	0	0	300	1,218	3,913	493	5,924	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	320	670	7,687	412	9,089	0
	99n	0	0	0	0	549,099	0	578	549,677	0
* 2,4-Dimethylphenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	37,140	30,368	1,573,273	50,362	397,965	75,967	131,351	2,296,426	24
	98o	6,240	93,314	1,491,389	42,851	530,961	29,711	224,073	2,418,539	193
	98n	0	0	0	0	18,158	0	2	18,160	0
	99o	19,796	65,907	2,259,859	20,085	602,600	23,241	188,116	3,179,604	183
	99n	0	0	0	0	140,677	0	45	140,722	0
* Dimethyl phthalate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,288	800	253,605	76,579	369,897	221,729	378,344	1,305,242	3
	98o	1,300	11	401,458	89,612	1,027,440	23,677	320,489	1,863,987	264
	98n	0	0	0	152,247	104,268	1,810	267	258,592	1
	99o	22,721	274	1,514,650	187,467	1,254,329	18,822	375,819	3,374,082	2
	99n	0	0	0	2,798	456,783	2,066	11,879	473,526	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
77-78-1	** Dimethyl sulfate	88	33	10,806	610	0	50	11,466	0	11,466
		95	40	6,712	1	0	0	6,713	0	6,713
		98o	35	10,831	46	0	0	10,877	1,010	11,887
		98n	1	0	0	0	0	0	0	0
		99o	31	9,828	3	0	0	9,831	0	9,831
		99n	3	45	1	0	0	46	187	233
99-65-0	m-Dinitrobenzene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	547	849	0	1,066	2,462	0	2,462
		98o	2	383	517	0	516	1,416	0	1,416
		98n	No reports							
		99o	2	382	442	0	49	873	0	873
		99n	2	3	0	0	0	3	100	103
528-29-0	o-Dinitrobenzene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	65	109	0	136	310	0	310
		98o	2	49	66	0	66	181	0	181
		98n	No reports							
		99o	2	49	63	0	0	112	0	112
		99n	No reports							
100-25-4	p-Dinitrobenzene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	16	30	0	37	83	0	83
		98o	1	13	18	0	18	49	0	49
		98n	No reports							
		99o	1	14	17	0	0	31	0	31
		99n	No reports							
88-85-7	* Dinitrobutyl phenol	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	879	2	0	0	881	0	881
		98o	5	1,051	0	0	0	1,051	6,843	7,894
		98n	2	6	0	0	0	6	45	51
		99o	5	1,005	0	0	50	1,055	16,848	17,903
		99n	1	0	0	0	0	0	0	0
534-52-1	* 4,6-Dinitro-o-cresol	88	10	274	266	0	2	542	46,648	47,190
		95	5	130	0	4,649	0	4,779	7,220	11,999
		98o	7	104	0	0	1,101	1,205	123,944	125,149
		98n	1	130	0	0	9,700	9,830	1,388	11,218
		99o	7	102	0	0	0	102	137,066	137,168
		99n	3	157	0	0	43,655	43,812	23,599	67,411
51-28-5	* 2,4-Dinitrophenol	88	11	20,825	98,692	86,200	257	205,974	110,285	316,259
		95	4	112	2,000	0	0	2,112	0	2,112
		98o	6	183	23,617	0	0	23,800	0	23,800
		98n	2	341	0	0	11,000	11,341	1,632	12,973
		99o	6	7	23,287	0	0	23,294	0	23,294
		99n	3	190	0	0	46,938	47,128	26,063	73,191

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** Dimethyl sulfate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	171,230	1	0	402,841	3	5,815	579,890	0
	98o	0	260,865	32,693	0	221,659	861	10,613	526,691	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	131,338	0	0	95,710	9,400	9,722	246,170	0
	99n	0	0	0	0	234,930	0	230	235,160	0
m-Dinitrobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	848,213	0	2,462	850,675	0
	98o	0	0	0	0	516,692	0	1,416	518,108	0
	98n	No reports								
	99o	0	0	0	0	490,539	0	873	491,412	0
	99n	0	0	0	0	124,420	0	102	124,522	0
o-Dinitrobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	445,133	0	310	445,443	0
	98o	0	0	0	0	66,089	0	181	66,270	0
	98n	No reports								
	99o	0	0	0	0	62,743	0	112	62,855	0
	99n	No reports								
p-Dinitrobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	29,589	0	83	29,672	0
	98o	0	0	0	0	18,024	0	49	18,073	0
	98n	No reports								
	99o	0	0	0	0	17,112	0	31	17,143	0
	99n	No reports								
* Dinitrobutyl phenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	263,629	0	34,226	110	881	298,846	0
	98o	0	0	310,000	0	12,003	0	7,891	329,894	0
	98n	0	0	0	0	47,850	0	51	47,901	0
	99o	0	0	323,000	0	15,011	1,000	17,898	356,909	0
	99n	0	0	0	0	54,836	0	0	54,836	0
* 4,6-Dinitro-o-cresol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	844,907	410	18,000	13,950	7,365	884,632	0
	98o	0	0	1,466,262	10,696	31,000	6,029	123,791	1,637,778	0
	98n	0	0	0	0	360	46	11,000	11,406	0
	99o	0	0	1,664,037	165,913	29,000	18,681	124,717	2,002,348	0
	99n	0	0	0	0	68,669	0	67,411	136,080	0
* 2,4-Dinitrophenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	556,712	9	1,160,000	220	2,103	1,719,044	0
	98o	0	0	562,709	29,118	1,770,236	0	23,800	2,385,863	1
	98n	0	0	0	0	246,877	53	13,191	260,121	0
	99o	0	0	301,737	317,192	1,642,419	72	23,290	2,284,710	1
	99n	0	0	0	0	240,644	0	73,191	313,835	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	
121-14-2	** 2,4-Dinitrotoluene	88	13	93,257	12,055	106,400	14,961	226,673	350,954
		95	4	1,874	231	0	0	2,105	2,199
		98o	5	1,829	187	0	0	2,016	2,016
		98n	8	166	0	0	10,000	10,166	11,574
		99o	7	1,858	168	0	0	2,026	27,515
		99n	8	429	1	0	43,420	43,850	67,656
606-20-2	** 2,6-Dinitrotoluene	88	7	87,597	957	27,000	0	115,554	146,436
		95	1	469	126	0	0	595	595
		98o	1	467	62	0	0	529	529
		98n	2	5	0	0	0	5	5
		99o	3	593	42	0	0	635	9,298
		99n	4	67	1	0	15,287	15,355	23,601
25321-14-6	Dinitrotoluene (mixed isomers)	88	NR	NR	NR	NR	NR	NR	NR
		95	6	14,811	284	17,000	0	32,095	32,101
		98o	8	26,639	1	36,000	0	62,640	64,042
		98n	4	0	0	5	0	5	6
		99o	12	10,571	0	1,100	0	11,671	11,987
		99n	2	2	1	0	0	3	9
39300-45-3	* Dinocap	88	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0
		98o	1	255	0	0	0	255	255
		98n	No reports						
		99o	No reports						
		99n	No reports						
123-91-1	** 1,4-Dioxane	88	73	612,633	203,320	0	11,702	827,655	838,609
		95	54	223,144	216,689	0	5,736	445,569	798,567
		98o	47	111,761	144,534	0	4,405	260,700	737,233
		98n	7	836	0	250	10,000	11,086	12,694
		99o	56	164,563	168,127	0	4,903	337,593	977,447
		99n	8	320	1	250	48,069	48,640	74,907
122-39-4	* Diphenylamine	88	NR	NR	NR	NR	NR	NR	NR
		95	23	50,706	200	9,060	65	60,031	94,758
		98o	26	61,958	25	9,665	250	71,898	115,407
		98n	4	20	0	0	0	20	110
		99o	32	51,013	32	5,772	250	57,067	103,015
		99n	5	13	0	0	10,130	10,143	10,562
122-66-7	1,2-Diphenylhydrazine	88	No reports						
		95	No reports						
		98o	No reports						
		98n	2	5	0	0	0	5	5
		99o	1	5	0	0	0	5	5
		99n	1	2	1	0	0	3	7

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** 2,4-Dinitrotoluene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	42,345	9	27,115	1,381	2,200	73,050	0
	98o	0	0	41,135	9,706	53,539	1,100	2,059	107,539	0
	98n	0	0	0	0	107,067	685	12,031	119,783	1
	99o	0	0	32,234	952	40,983	21,382	22,933	118,484	2
	99n	0	0	0	0	1,030,736	0	67,249	1,097,985	0
** 2,6-Dinitrotoluene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	6,160	1	9,180	118	595	16,054	0
	98o	0	0	0	0	44,509	118	529	45,156	0
	98n	0	0	0	0	3,755	37	1	3,793	1
	99o	0	0	3,451	0	33,205	5,200	825	42,681	1
	99n	0	0	0	0	94,476	0	23,592	118,068	0
Dinitrotoluene (mixed isomers)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	9,100	181,321	882,089	32,321	1,104,831	2,500
	98o	0	202,569	0	6	114,686	587,330	63,375	967,966	8,701
	98n	0	0	0	6	86,495	0	4	86,505	0
	99o	0	0	0	0	716,160	697,028	12,224	1,425,412	3,203
	99n	0	0	0	0	143,316	0	3	143,319	0
* Dinocap	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	109	8	117	0
	98n	No reports								
	99o	No reports								
	99n	No reports								
** 1,4-Dioxane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	74,293	11,324	1,975,960	1,196,352	1,019,104	305,315	790,118	5,372,466	232
	98o	1,120,000	4,101	595,806	672,324	1,800,876	421,792	832,719	5,447,618	20
	98n	0	0	0	454,236	26,614	3,549	12,814	497,213	1
	99o	1,519,000	13,401	1,811,182	1,286,086	1,995,984	368,480	1,061,089	8,055,222	12
	99n	30,078	0	0	225,348	372,025	8,283	74,549	710,283	0
* Diphenylamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	976,755	11,600	1,100,115	264,471	46,428	722,296	95,833	3,217,498	0
	98o	199,400	35,131	4,769,102	823,607	21,971	77,905	86,252	6,013,368	5,700
	98n	0	0	0	0	224,324	0	104	224,428	0
	99o	155,450	229	5,216,863	754,400	279,900	83,588	83,710	6,574,140	4
	99n	0	0	0	46,894	205,207	0	10,386	262,487	0
1,2-Diphenylhydrazine	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	5,485	55	1	5,541	1
	99o	0	0	0	0	5,267	53	1	5,321	1
	99n	0	0	0	0	32,000	0	1	32,001	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
2164-07-0 *	Dipotassium endothall	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	2	20	0	0	0	20	0	20
		98n	No reports							
		99o	1	10	0	0	0	10	0	10
		99n	No reports							
136-45-8 *	Dipropyl isocinchomeronate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
138-93-2 *	Disodium cyanodithioimidocarbonate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	0	0	0	0	0	0	0
		98o	5	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
541-53-7 *	2,4-Dithiobiuret	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	2	11	0	0	0	11	333	344
330-54-1 *	Diuron	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	8	2,765	10	0	5	2,780	1,950	4,730
		98o	11	3,323	260	0	0	3,583	14,100	17,683
		98n	1	0	0	0	35,756	35,756	0	35,756
		99o	8	4,919	260	0	0	5,179	0	5,179
		99n	1	0	0	0	0	0	2	2
2439-10-3 *	Dodine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	10	0	0	0	10	0	10
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
120-36-5 **, *	2,4-DP	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	260	0	0	0	260	17	277
		98o	3	0	0	0	0	0	0	0
		98n	No reports							
		99o	5	68	0	0	0	68	0	68
		99n	1	2	0	0	0	2	54	56

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Dipotassium-endothall	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	1,900	5,400	201	7,501	0
	98n	No reports								
	99o	0	0	0	0	0	3,400	400	3,800	0
	99n	No reports								
* Dipropyl isocinchomeronate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Disodium cyanodithioimidocarbonate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* 2,4-Dithiobiuret	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	122,493	0	342	122,835	0
* Diuron	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	300	0	0	2	0	5,711	6,568	12,581	0
	98o	250	0	0	0	0	20,767	7,292	28,309	126
	98n	0	0	0	0	0	0	35,756	35,756	0
	99o	250	0	0	0	0	4,336	26,196	30,782	5
	99n	0	0	0	0	18,317	0	2	18,319	0
* Dodine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	270	5	275	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
*,** 2,4-DP	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,633	0	0	0	0	11	536	6,180	1
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	68	68	0
	99n	0	0	0	0	9,954	0	56	10,010	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Off-site Releases	Total On- and Off-site Releases Pounds	
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds		Transfers Off-site to Disposal Pounds
2702-72-9	*,** 2,4-D sodium salt	88	NR	NR	NR	NR	NR	NR	NR	
		95	1	0	0	0	0	0	0	
		98o	1	0	0	0	0	0	0	
		98n	No reports							
		99o	1	0	30	0	0	30	0	30
99n	No reports									
106-89-8	*,** Epichlorohydrin	88	78	707,107	4,917	68,750	2,524	783,298	307	783,605
		95	69	321,450	26,937	0	19,035	367,422	893	368,315
		98o	75	198,155	434	0	2,167	200,756	7,751	208,507
		98n	8	45	0	12,162	0	12,207	8,852	21,059
		99o	73	146,482	305	0	1,745	148,532	2,173	150,705
		99n	9	60	1	0	0	61	719	780
13194-48-4	* Ethoprop	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	6	506	0	0	174,290	174,796	0	174,796
		98o	6	34	0	0	116,444	116,478	0	116,478
		98n	1	0	0	0	0	0	6	6
		99o	7	1	0	0	121,886	121,887	0	121,887
		99n	1	0	0	0	0	0	27	27
110-80-5	2-Ethoxyethanol	88	110	2,431,310	120,164	0	52	2,551,526	71,142	2,622,668
		95	40	222,940	891	0	0	223,831	12,595	236,426
		98o	26	88,954	1	0	0	88,955	2,013	90,968
		98n	15	565	0	0	0	565	976	1,541
		99o	25	139,412	377	0	17	139,806	1,000	140,806
		99n	21	1,138	1	0	0	1,139	83,634	84,773
140-88-5	** Ethyl acrylate	88	105	245,982	1,211	0	265	247,458	7,110	254,568
		95	106	221,362	542	0	523	222,427	10,182	232,609
		98o	100	123,762	110	0	524	124,396	12,016	136,412
		98n	10	3,372	0	0	0	3,372	267	3,639
		99o	97	129,276	111	810	516	130,713	28,772	159,485
		99n	12	1,844	1	0	14,649	16,494	880	17,374
100-41-4	** Ethylbenzene	88	564	7,718,781	15,970	72,914	175,180	7,982,845	421,334	8,404,179
		95	1,036	10,273,428	9,343	475,234	19,174	10,777,179	165,756	10,942,935
		98o	1,025	8,466,984	7,284	763,279	200,692	9,438,239	148,388	9,586,627
		98n	618	129,343	2,746	913	14,229	147,231	23,576	170,807
		99o	1,033	8,590,322	7,408	868,615	7,245	9,473,590	173,776	9,647,366
		99n	586	114,904	1,805	11,684	32,615	161,008	165,740	326,748
541-41-3	Ethyl chloroformate	88	5	13,903	0	0	0	13,903	0	13,903
		95	3	2,020	5	0	5	2,030	0	2,030
		98o	5	2,259	5	0	5	2,269	0	2,269
		98n	No reports							
		99o	4	2,200	5	0	5	2,210	0	2,210
99n	No reports									

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
*,** 2,4-D sodium salt	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	5,139	0	0	5,139	0
	98o	0	0	0	0	4,600	0	0	4,600	0
	98n	No reports								
	99o	0	0	0	0	20,000	0	30	20,030	0
	99n	No reports								
*,** Epichlorohydrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	13,263,282	0	4,331,319	171,461	4,190,667	952,542	343,764	23,253,035	20,516
	98o	10,499,178	17,715	4,809,942	77,141	24,705,268	953,525	201,067	41,263,836	2
	98n	0	0	49,900	8,069	546,631	0	23,091	627,691	0
	99o	11,169,456	0	4,120,790	103,015	32,646,933	489,049	151,387	48,680,630	0
	99n	0	0	303	0	849,911	0	811	851,025	0
* Ethoprop	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	9	0	0	0	0	9,404	174,442	183,855	2
	98o	95	0	0	0	0	4,943	116,478	121,516	2
	98n	0	0	0	0	12,176	0	6	12,182	0
	99o	69	0	0	0	0	20,347	137,041	157,457	2
	99n	0	0	0	0	50,057	0	27	50,084	0
2-Ethoxyethanol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,300	1,720	434,164	142,160	1,332,131	438,878	222,188	2,573,541	36,529
	98o	1,400	0	584,971	93,670	507,214	847,586	112,530	2,147,371	10,517
	98n	125,525	26,052	0	2,960,338	77,858	15,482	1,524	3,206,779	0
	99o	1,200	0	12,992,481	93,097	882,595	906,595	150,784	15,026,752	1
	99n	1,245,636	87,571	0	1,956,055	1,168,105	1,528,555	1,906	5,987,828	10
** Ethyl acrylate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	79	32,449	8,159,796	1,356,852	487,880	96,769	231,219	10,365,044	24,065
	98o	381,888	191	8,430,381	1,518,284	1,178,908	353,939	138,413	12,002,004	4,154
	98n	0	9,269	0	887,313	252,221	45	3,633	1,152,481	2
	99o	606,528	260	10,064,209	1,717,979	887,528	368,981	168,304	13,813,789	2,512
	99n	0	0	0	8,908	454,088	33,550	17,120	513,666	1
** Ethylbenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	25,033,644	6,766,192	40,932,118	11,370,779	19,482,390	1,784,871	10,844,606	116,214,600	13,446
	98o	28,773,321	6,330,695	36,760,025	10,124,853	15,975,930	2,288,654	9,512,291	109,765,769	53,235
	98n	2,613,939	382,495	42,357	18,809,613	2,401,346	1,389,141	575,447	26,214,338	101,987
	99o	24,787,296	5,588,009	33,364,869	8,424,482	17,277,117	1,697,966	9,839,531	100,979,270	46,343
	99n	3,373,608	86,497	111,775	6,079,702	2,712,916	938,249	149,952	13,452,699	12,911
Ethyl chloroformate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	3,300	0	1,980	5,280	10
	98o	0	0	0	0	53,660	0	2,035	55,695	0
	98n	No reports								
	99o	0	0	0	0	21,445	0	1,998	23,443	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
759-94-4 *	Ethyl dipropylthiocarbamate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	2,363	291	373	0	3,027	9,366	12,393
		98o	5	2,008	115	2,088	0	4,211	4,565	8,776
		98n	1	0	0	0	0	0	0	0
		99o	4	2,574	156	903	0	3,633	3,570	7,203
		99n	No reports							
74-85-1 *	Ethylene	88	274	50,503,039	15,214	17,203	13,250	50,548,706	11,432	50,560,138
		95	289	35,261,213	27,574	0	16	35,288,803	1,771	35,290,574
		98o	313	31,002,313	3,059	4,217	83	31,009,672	1,815	31,011,487
		98n	9	46,345	0	0	0	46,345	0	46,345
		99o	302	25,487,756	918	65,158	71,624	25,625,456	361	25,625,817
		99n	9	42,756	0	0	0	42,756	0	42,756
—	Ethylenebisdithiocarbamic acid, salts and esters	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	1,630	0	0	0	1,630	0	1,630
		98o	4	164	0	0	0	164	513	677
		98n	1	0	0	0	0	0	0	0
		99o	4	256	0	0	0	256	0	256
		99n	2	5	0	0	0	5	159	164
107-21-1 *	Ethylene glycol	88	1,455	13,218,339	3,747,561	7,927,570	736,344	25,629,814	2,595,276	28,225,090
		95	1,313	7,224,374	869,708	12,554,675	853,550	21,502,307	1,480,855	22,983,162
		98o	1,274	5,992,249	828,275	327,030	426,720	7,574,274	1,236,029	8,810,303
		98n	390	31,993	1,215	215,158	473,025	721,391	658,721	1,380,112
		99o	1,231	5,904,980	542,567	732,545	343,582	7,523,674	2,191,347	9,715,021
		99n	398	25,438	1,480	492,264	643,972	1,163,154	255,700	1,418,854
151-56-4 **	Ethyleneimine	88	1	500	0	0	0	500	0	500
		95	1	3	0	0	0	3	0	3
		98o	1	21	0	0	0	21	0	21
		98n	1	13	0	0	0	13	0	13
		99o	1	6	0	0	0	6	0	6
		99n	2	4	0	0	0	4	153	157
75-21-8 *,**	Ethylene oxide	88	203	4,640,310	44,851	11,125	54,700	4,750,986	20,663	4,771,649
		95	169	939,303	5,230	130,000	2,208	1,076,741	8,663	1,085,404
		98o	136	584,924	372	22,561	1,751	609,608	1,860	611,468
		98n	19	105,764	0	0	0	105,764	0	105,764
		99o	130	446,800	1,157	10,796	1,750	460,503	60,920	521,423
		99n	18	37,038	1	0	0	37,039	4	37,043
96-45-7 *,**	Ethylene thiourea	88	6	500	0	0	0	500	2,250	2,750
		95	11	775	0	0	0	775	19,665	20,440
		98o	14	299	5	0	0	304	6,387	6,691
		98n	2	0	0	0	0	0	0	0
		99o	13	269	5	0	0	274	5,422	5,696
		99n	4	24	0	0	0	24	773	797

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Ethyl dipropylthiocarbamate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	6,500	33,010	12,476	51,986	0
	98o	0	0	0	0	70,619	33,089	8,528	112,236	524
	98n	0	0	0	0	11,716	0	0	11,716	0
	99o	0	0	0	0	859	14,694	7,119	22,672	1,508
	99n	No reports								
* Ethylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	196,803,539	3	403,745,755	10,615,177	495,602,266	2,116,568	34,809,790	1,143,693,098	765,804
	98o	123,871,793	0	608,832,745	12,978,078	509,119,560	3,013,379	29,288,019	1,287,103,574	1,428,760
	98n	0	0	0	0	540	0	46,087	46,627	0
	99o	146,760,300	317	411,077,331	11,136,191	672,311,331	4,761,444	26,593,836	1,272,640,750	393,959
	99n	0	0	0	0	8,080	0	42,624	50,704	0
Ethylenebisdithiocarbamic acid, salts and esters	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	7,250	1,500	8,750	1
	98o	0	0	0	0	0	3,329	672	4,001	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	0	8,070	356	8,426	0
	99n	0	0	0	0	129,960	0	164	130,124	0
* Ethylene glycol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	366,424,640	101,902,466	5,926,147	13,194,374	65,597,774	34,533,840	22,580,362	610,159,603	305,209
	98o	461,217,302	49,728,089	6,683,532	18,937,602	64,431,563	31,349,445	9,756,044	642,103,577	819,151
	98n	10,539,705	10,238,097	12,386	3,186,484	1,914,090	516,636	812,855	27,220,253	12,633
	99o	470,136,680	59,418,281	7,811,770	15,053,619	51,158,755	27,746,846	10,702,215	642,028,166	931,568
	99n	7,186,483	12,269,886	615,919	1,408,570	2,157,663	1,736,953	1,243,185	26,618,659	846
** Ethyleneimine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	34,000	0	3	34,003	0
	98o	0	0	0	0	24,000	0	21	24,021	0
	98n	0	0	0	31,069	0	0	13	31,082	1
	99o	0	0	0	0	23,000	0	6	23,006	0
	99n	0	0	0	0	107,040	0	157	107,197	0
*,** Ethylene oxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	127,110	307	16,940	0	9,974,540	70,255	1,073,275	11,262,427	15,974
	98o	16,698	1,140	13,121	10	8,006,017	179,253	555,898	8,772,137	54,314
	98n	0	0	0	1,043,180	2,998,788	10,810	105,044	4,157,822	108
	99o	33,020	7,400	148,002	16	8,220,522	154,693	514,119	9,077,772	4,035
	99n	0	0	0	0	3,154,065	11,920	37,729	3,203,714	588
*,** Ethylene thiourea	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1	840	0	0	1	6,282	19,877	27,001	1
	98o	430	565	0	0	0	8,632	6,635	16,262	1
	98n	0	0	0	0	0	0	0	0	0
	99o	2,700	800	0	0	0	3,650	5,726	12,876	4
	99n	0	0	0	0	690,152	0	795	690,947	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
75-34-3	Ethylidene dichloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	40,471	16	0	0	40,487	0	40,487
		98o	7	43,977	0	0	0	43,977	0	43,977
		98n	6	393	0	0	0	393	8	401
		99o	9	84,205	0	0	3	84,208	0	84,208
		99n	2	92	1	0	0	93	9	102
52-85-7 *	Famphur	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	9,200	9,200
		98n	1	5	0	0	0	5	0	5
		99o	2	0	0	0	0	0	5,612	5,612
		99n	1	5	0	0	0	5	0	5
60168-88-9 *	Fenarimol	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	1,000	0	0	0	1,000	0	1,000
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
13356-08-6 *	Fenbutatin oxide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	2	664	0	660	0	1,324	0	1,324
		98n	No reports							
		99o	2	664	0	660	0	1,324	0	1,324
		99n	No reports							
72490-01-8 *	Fenoxycarb	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	1	1
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
39515-41-8 *	Fenpropathrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
55-38-9 *	Fenthion	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	1	0	0	0	1	0	1
		98n	No reports							
		99o	No reports							
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Ethylidene dichloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,300,000	0	92,000	0	1,532,000	19,149	40,156	2,983,305	15,005
	98o	1,600,000	0	1,431,278	0	2,332,070	23,768	43,948	5,431,064	89
	98n	0	0	0	10,275	35,933	4,528,132	395	4,574,735	1
	99o	2,190,000	0	2,712,610	456	3,522,136	10,830	84,125	8,520,157	81
	99n	0	0	0	0	117,269	0	99	117,368	0
* Famphur	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	3,758	0	3,758	0
	98o	0	0	0	0	0	46,000	0	46,000	9
	98n	0	0	0	0	25,761	0	7	25,768	0
	99o	0	0	0	0	0	2,200	0	2,200	5,612
	99n	0	0	0	0	25,757	0	4	25,761	0
* Fenarimol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	310	650	960	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Fenbutatin oxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	1,324	1,324	0
	98n	No reports								
	99o	0	0	0	33,822	0	0	1,324	35,146	0
	99n	No reports								
* Fenoxycarb	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	40,000	0	1	40,001	0
	98n	No reports								
	99o	0	0	0	0	28,000	0	0	28,000	0
	99n	No reports								
* Fenpropathrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Fenthion	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	960	1	961	0
	98n	No reports								
	99o	No reports								
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
51630-58-1	* Fenvalerate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	No reports							
69806-50-4	* Fluazifop butyl	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
2164-17-2	* Fluometuron	88	2	500	0	0	0	500	3,700	4,200
		95	6	796	0	0	0	796	2,355	3,151
		98o	5	782	0	0	0	782	745	1,527
		98n	No reports							
		99o	4	263	0	0	0	263	0	263
		99n	No reports							
7782-41-4	Fluorine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	7	18,319	15,000	0	0	33,319	0	33,319
		98o	10	81,938	49,857	0	0	131,795	0	131,795
		98n	2	39,082	0	0	90,778	129,860	0	129,860
		99o	13	86,302	54,153	0	0	140,455	0	140,455
		99n	3	427	0	0	105,417	105,844	0	105,844
51-21-8	Fluorouracil	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	0	0	0	250	250	250	500
		98n	No reports							
		99o	1	0	0	0	250	250	500	750
		99n	No reports							
69409-94-5	* Fluvalinate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
133-07-3	* Folpet	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	16	5	0	0	21	1,941	1,962
		98o	8	56	10	0	0	66	4,103	4,169
		98n	No reports							
		99o	6	36	10	0	0	46	3,023	3,069
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Fenvalerate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
* Fluazifop butyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Fluometuron	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	2	0	16,900	5,646	22,548	13,000
	98o	0	0	0	0	25,000	8,541	1,385	34,926	0
	98n	No reports								
	99o	0	0	0	0	37,000	2,512	1,680	41,192	0
	99n	No reports								
Fluorine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	15,000	0	33,300	48,300	0
	98o	0	0	0	0	17,450	36,510	131,795	185,755	3
	98n	0	0	0	0	0	0	129,859	129,859	0
	99o	0	0	0	0	26,581	20,435	140,495	187,511	33
	99n	0	0	0	0	31,839	0	105,844	137,683	0
Fluorouracil	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	964	0	0	0	0	0	0	964	0
	98n	No reports								
	99o	1,188	0	0	0	0	0	0	1,188	0
	99n	No reports								
* Fluvalinate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Folpet	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	80	0	0	801	290	1,962	3,133	0
	98o	2	0	0	0	2,100	0	4,121	6,223	0
	98n	No reports								
	99o	943	0	0	0	2,000	627	3,069	6,639	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On-site Releases	Transfers Off-site to Disposal	
				Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	
72178-02-0	Fomesafen	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	10	0	0	0	10	750	760
		98o	2	884	1,532	0	0	2,416	9,191	11,607
		98n	1	0	0	0	0	0	0	0
		99o	2	1,210	1,149	0	0	2,359	7,976	10,335
		99n	1	0	0	0	0	0	0	0
50-00-0	*,** Formaldehyde	88	823	12,459,138	904,547	9,608,524	494,111	23,466,320	1,409,999	24,876,319
		95	799	11,741,591	279,255	7,313,034	132,453	19,466,333	209,916	19,676,249
		98o	828	11,801,377	300,780	9,648,556	204,227	21,954,940	355,281	22,310,221
		98n	38	143,166	0	76,238	83,190	302,594	6,228	308,822
		99o	818	12,324,161	350,933	10,849,428	302,910	23,827,432	191,642	24,019,074
		99n	33	85,118	1	31,437	0	116,556	6,264	122,820
64-18-6	* Formic acid	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	268	592,409	15,759	11,492,418	3,210	12,103,796	26,377	12,130,173
		98o	274	955,683	95,918	10,842,580	3,299	11,897,480	47,935	11,945,415
		98n	51	3,053	19	326,344	65,624	395,040	3,175	398,215
		99o	263	763,783	175,284	11,424,031	3,610	12,366,708	49,940	12,416,648
		99n	47	1,839	11	31,000	0	32,850	2,819	35,669
76-13-1	Freon 113	88	1,438	70,382,591	32,894	5,965	27,799	70,449,249	1,924,043	72,373,292
		95	138	2,608,115	3,829	6	0	2,611,950	2,560	2,614,510
		98o	32	941,033	1,627	0	0	942,660	4,287	946,947
		98n	17	1,016	0	0	0	1,016	746	1,762
		99o	24	744,932	1,932	0	0	746,864	88	746,952
		99n	12	1,178	1	0	9,955	11,134	5,392	16,526
—	Glycol ethers	88	1,628	48,881,581	285,937	362,198	105,185	49,634,901	1,547,840	51,182,741
		95	2,188	45,285,377	188,537	132,064	27,695	45,633,673	778,577	46,412,250
		98o	2,046	38,186,292	193,191	1,370	41,413	38,422,266	833,968	39,256,234
		98n	259	31,027	0	0	16,900	47,927	17,995	65,922
		99o	1,960	36,049,499	104,389	716	49,181	36,203,785	845,084	37,048,869
		99n	241	33,708	0	0	24,398	58,106	105,135	163,241
76-44-8	*,** Heptachlor	88	2	54,295	2	0	0	54,297	0	54,297
		95	1	203	6	0	0	209	0	209
		98o	No reports							
		98n	6	137	0	5	0	142	12	154
		99o	No reports							
		99n	4	5	1	0	0	6	14	20
118-74-1	*,** Hexachlorobenzene	88	9	4,045	4	410	0	4,459	443,541	448,000
		95	9	566	6,458	480	0	7,504	6,975	14,479
		98o	12	371	4	0	96	471	13,251	13,722
		98n	5	15	0	0	0	15	77	92
		99o	14	1,524	7	0	23	1,554	1,497	3,051
		99n	6	11	1	0	13,000	13,012	9	13,021

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Fomesafen	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	200	200	0
	98o	0	0	0	0	56,080	8,845	12,776	77,701	0
	98n	0	0	0	0	12,741	0	0	12,741	0
	99o	0	0	0	0	64,083	1,522	11,035	76,640	0
	99n	0	0	0	0	15,000	0	0	15,000	0
*,** Formaldehyde	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	75,909,072	56,999	6,758,262	423,718	68,740,738	2,918,602	19,522,873	174,330,264	268,362
	98o	101,303,291	591,297	14,709,147	372,961	92,664,308	3,670,967	21,773,888	235,085,859	16,039
	98n	189	0	5,866	1,582,146	531,568	14,648	306,176	2,440,593	2
	99o	106,756,307	466,490	15,544,496	386,987	81,454,127	4,319,695	23,699,737	232,627,839	15,243
	99n	45,284	0	2,110	114,378	1,316,978	16,496	117,708	1,612,954	11
* Formic acid	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	95,200	28	7,215,445	236,018	113,989,498	1,522,252	12,253,648	135,312,089	14
	98o	808,843	14	5,818,086	1,774,563	155,384,846	3,587,939	12,186,094	179,560,385	6
	98n	0	0	0	1,973,764	242,133	11,082	395,995	2,622,974	4
	99o	710,746	10	6,613,867	1,731,510	137,622,016	1,392,044	12,624,529	160,694,722	110
	99n	0	0	0	2	507,537	485	35,102	543,126	2
Freon 113	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,355,210	913,898	0	103,937	260,926	582,454	2,612,917	6,829,342	30,141
	98o	407,512	73,959	39,916	12,608	3,372	139,670	936,926	1,613,963	6,307
	98n	75,808	67	0	106,221	1,167,895	5,166,938	1,778	6,518,707	2
	99o	179,917	97,641	37,035	16,184	4,064	135,979	680,569	1,151,389	65,287
	99n	75,298	117	0	11,418	858,798	17,969	16,578	980,178	0
Glycol ethers	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	191,651,289	3,543,301	42,789,982	13,212,104	32,546,584	9,163,285	47,371,160	340,277,705	35,391
	98o	141,591,008	3,987,510	32,890,636	13,184,421	33,149,649	9,868,039	40,464,138	275,135,401	377,569
	98n	974,147	164,569	135,664	2,034,482	837,402	101,280	75,787	4,323,331	5,277
	99o	165,270,650	4,122,030	44,173,570	12,748,292	44,098,174	9,737,420	38,228,498	318,378,634	11,200
	99n	1,330,939	39,774	763,444	1,936,635	671,775	462,849	74,635	5,280,051	1,280
*,** Heptachlor	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	3,850	851	209	4,910	0
	98o	No reports								
	98n	0	0	0	0	443,474	35	153	443,662	0
	99o	No reports								
	99n	0	0	0	0	217,288	114	15	217,417	0
*,** Hexachlorobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	6,200	1	0	0	2,865,008	428,747	18,549	3,318,505	19
	98o	8,100	1	114,000	54,632	1,577,157	18,214	13,636	1,785,740	0
	98n	0	0	0	0	86,605	38	88	86,731	1
	99o	6,601	26,253	98,000	40,950	5,231,018	22,285	15,205	5,440,312	8
	99n	0	0	0	0	399,458	699	13,013	413,170	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
87-68-3	Hexachloro-1,3-butadiene	88	9	2,508	153	220	0	2,881	19,640	22,521
		95	7	3,310	661	434	0	4,405	252	4,657
		98o	7	2,380	5	0	0	2,385	510	2,895
		98n	7	280	250	5	0	535	480	1,015
		99o	8	5,003	1	0	22	5,026	4	5,030
		99n	4	268	1	0	0	269	96	365
77-47-4 *	Hexachlorocyclopentadiene	88	5	78,317	6	2,131	0	80,454	28,470	108,924
		95	4	8,311	6	250	0	8,567	2,995	11,562
		98o	4	5,791	0	250	5,520	11,561	567	12,128
		98n	4	10	0	0	0	10	500	510
		99o	4	1,098	1	0	0	1,099	903	2,002
		99n	3	16	1	0	0	17	293	310
67-72-1 *	Hexachloroethane	88	22	19,077	11	520	1	19,609	128,504	148,113
		95	21	14,551	3,330	1,378	0	19,259	1,208	20,467
		98o	15	44,950	0	295	0	45,245	696	45,941
		98n	7	862	0	0	0	862	628	1,490
		99o	15	42,174	0	320	10	42,504	0	42,504
		99n	9	1,326	1	0	9,264	10,591	18,389	28,980
70-30-4 *	Hexachlorophene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	7	1	0	0	8	165	173
110-54-3	n-Hexane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	731	82,152,368	46,402	5,380	11,559	82,215,709	120,420	82,336,129
		98o	810	67,317,657	14,106	26,506	19,592	67,377,861	104,309	67,482,170
		98n	657	958,660	1,667	0	2,491	962,818	38,702	1,001,520
		99o	788	55,057,176	11,114	36,511	7,424	55,112,225	47,692	55,159,917
		99n	642	1,013,334	2,778	5,483	564	1,022,159	28,783	1,050,942
51235-04-2 *	Hexazinone	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	760	6,322	0	0	7,082	2,973	10,055
		98o	5	266	2,215	0	0	2,481	750	3,231
		98n	No reports							
		99o	5	264	6,297	0	0	6,561	250	6,811
		99n	No reports							
67485-29-4 *	Hydramethylnon	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	20	0	0	0	20	0	20
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	10	0	0	750	760	0	760
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Hexachloro-1,3-butadiene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	13	133,000	0	6,778,662	164,970	4,444	7,081,089	660,211
	98o	0	0	15,200	0	4,289,000	162,314	2,650	4,469,164	410
	98n	0	0	0	0	283,141	40	363	283,544	1
	99o	280,000	0	0	0	8,715,965	52,784	5,249	9,053,998	36,001
	99n	0	0	0	0	554,740	0	362	555,102	0
* Hexachlorocyclopentadiene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	272,865	24,908	11,478	309,251	76
	98o	0	0	0	552	882,835	100,678	6,611	990,676	4,800
	98n	0	0	0	0	21,880	2,695,206	151	2,717,237	1
	99o	0	0	0	388	392,082	10,812	1,980	405,262	84,001
	99n	0	0	0	0	145,509	1	177	145,687	0
* Hexachloroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,800	0	1,232,400	75,132	4,875,108	109,188	30,153	6,326,781	129,205
	98o	1,100,000	0	1,134,700	85,401	3,887,000	52,877	45,206	6,305,184	36
	98n	0	0	0	2,214	543,137	2	1,138	546,491	0
	99o	1,930,000	164,072	740,000	87,890	2,756,485	44,622	42,275	5,765,344	357
	99n	138,553	0	0	123,769	576,027	162	15,427	853,938	10
* Hexachlorophene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	219,953	0	168	220,121	0
n-Hexane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,125,732,524	7,008,154	25,411,631	14,640,456	50,038,708	8,044,644	82,573,862	4,313,449,979	80,385
	98o	985,817,721	13,482,100	42,461,972	19,657,395	65,463,658	5,169,506	66,618,641	1,198,670,993	73,597
	98n	4,957,135	392,648	79,618	11,276,001	5,850,748	1,111,403	1,327,085	24,994,638	28,210
	99o	659,983,814	11,483,629	54,779,642	21,338,150	60,988,140	4,763,576	54,269,832	867,606,783	330,281
	99n	2,754,933	152,971	132,470	6,852,351	6,215,513	2,609,634	1,027,469	19,745,341	27,680
* Hexazinone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	50	0	0	0	6,954	216,172	9,410	232,586	0
	98o	0	0	0	0	110,000	201,891	8,580	320,471	0
	98n	No reports								
	99o	0	0	0	0	71,000	164,269	13,155	248,424	0
	99n	No reports								
* Hydramethylnon	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	3	17	20	0
	98o	0	0	0	0	0	0	24	24	0
	98n	No reports								
	99o	0	0	0	0	0	0	5	5	5
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
302-01-2	** Hydrazine	88	55	35,199	2,149	0	29	37,377	24,522	61,899
		95	47	13,940	3	0	5	13,948	23,504	37,452
		98o	46	10,908	188	695	251	12,042	336	12,378
		98n	18	290	0	26,116	120	26,526	824	27,350
		99o	47	10,011	641	0	252	10,904	46	10,950
		99n	15	267	1	88,378	120	88,766	476	89,242
10034-93-2	** Hydrazine sulfate	88	4	1,172	0	355,000	0	356,172	0	356,172
		95	3	0	0	260,000	0	260,000	0	260,000
		98o	1	0	0	200,000	0	200,000	0	200,000
		98n	No reports							
		99o	1	0	0	190,000	0	190,000	0	190,000
		99n	No reports							
7647-01-0	* Hydrochloric acid	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1,960	69,969,121	6,871	788,214	24,091	70,788,297	2,369,337	73,157,634
		98o	970	54,510,115	2,575	100,099	21,860	54,634,649	1,226,418	55,861,067
		98n	529	555,674,688	1	0	406	555,675,095	510	555,675,605
		99o	984	50,706,145	495	36,795	65,434	50,808,869	2,399,208	53,208,077
		99n	517	615,487,369	11	0	5	615,487,385	23	615,487,408
74-90-8	* Hydrogen cyanide	88	35	1,109,277	2,300	1,737,850	1,761	2,851,188	1,001	2,852,189
		95	51	2,481,956	763	683,154	3	3,165,876	326	3,166,202
		98o	50	1,456,583	308	590,597	18	2,047,506	2,729	2,050,235
		98n	27	612,155	0	0	112,505	724,660	0	724,660
		99o	47	1,353,897	290	1,433,776	483	2,788,446	1,371	2,789,817
		99n	23	279,102	0	0	1,452	280,554	0	280,554
7664-39-3	* Hydrogen fluoride	88	536	14,732,294	189,928	250	13,002	14,935,474	3,467,471	18,402,945
		95	575	11,616,575	8,702	3,845	24,078	11,653,200	1,020,034	12,673,234
		98o	626	15,612,197	23,194	0	12,740	15,648,131	55,434	15,703,565
		98n	403	64,074,150	6	2,900,000	151,228	67,125,384	50,701	67,176,085
		99o	626	14,434,432	16,983	0	5,353	14,456,768	31,399	14,488,167
		99n	400	58,265,750	12	4,100,000	130,120	62,495,882	60,094	62,555,976
123-31-9	Hydroquinone	88	61	10,334	7,211	375,400	530	393,475	6,835	400,310
		95	64	17,706	5,093	340,005	43	362,847	4,406	367,253
		98o	59	13,867	1,558	332,000	0	347,425	27,893	375,318
		98n	3	0	0	15,309	0	15,309	0	15,309
		99o	59	58,145	2,260	367,000	5	427,410	14,504	441,914
		99n	4	505	0	0	0	505	2,255	2,760
35554-44-0	* Imazalil	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	0	0	0	0	0	10	10
		98n	No reports							
		99o	No reports							
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** Hydrazine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	300	452	0	0	31,538	8,966	37,225	78,481	2
	98o	25	0	0	297	99,831	302,545	37,526	440,224	1
	98n	0	0	0	1,762	179,583	0	27,126	208,471	0
	99o	25	0	5	0	61,611	142,341	53,354	257,336	3
	99n	0	0	0	45	455,640	10	88,759	544,454	0
** Hydrazine sulfate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1,900	1,900	260,000	263,800	0
	98o	0	0	0	0	0	0	200,000	200,000	0
	98n	No reports								
	99o	0	0	0	0	0	0	190,000	190,000	0
	99n	No reports								
* Hydrochloric acid	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	175,235,762	15,821,343	100,650	1,510	1,041,628,574	26,254,628	71,483,581	1,330,526,048	114,031
	98o	85,368,494	2,681,128	190,000	12,782	718,724,495	6,548,885	54,954,361	868,480,145	53,158
	98n	0	0	0	231,145	200,833,658	1,567	556,111,318	757,177,688	120,530
	99o	65,963,382	1,283,791	190,000	16,118	802,018,290	9,650,266	51,015,558	930,137,405	223,575
	99n	0	0	0	1	211,816,503	41,474	627,959,096	839,817,074	159,083
* Hydrogen cyanide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	72,134	0	33,141,239	70	25,143,135	10,443	3,141,004	61,508,025	27,155
	98o	57,228	0	24,442,117	0	21,259,696	473	2,044,055	47,803,569	288
	98n	53,473	0	0	0	42,101	0	728,335	823,909	7
	99o	117,205	0	27,900,378	0	19,447,535	2,675	2,765,799	50,233,592	186
	99n	29,774	0	0	0	98,104	0	280,102	407,980	6
* Hydrogen fluoride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	92,491,171	222,387	0	9,201	103,217,512	2,489,439	12,865,119	211,294,829	11,499
	98o	135,034,314	147,393	0	4,910	113,576,035	2,309,902	15,485,434	266,557,988	11,219
	98n	7,522	8,852	0	0	33,587,444	47,627	67,491,164	101,142,609	56
	99o	141,841,605	140,373	0	1,614	100,863,244	2,380,036	14,677,632	259,904,504	63,502
	99n	0	5,600	0	0	28,937,660	43,274	62,064,081	91,050,615	28
Hydroquinone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	960	0	986,933	37,786	417,185	86,342	363,576	1,892,782	45
	98o	3,200	0	848,845	10,066	405,144	126,922	359,750	1,753,927	2
	98n	0	0	0	0	85,610	0	15,309	100,919	0
	99o	1,300	0	927,893	36,525	656,620	157,583	445,098	2,225,019	0
	99n	30,660	0	1,563	13,050	105,812	1,624	326	153,035	10
* Imazalil	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	15	0	15	15
	98n	No reports								
	99o	No reports								
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	
55406-53-6 *	3-Iodo-2-propynyl butylcarbamate	88	NR	NR	NR	NR	NR	NR	NR
		95	11	3,959	10	0	265	4,234	16,997
		98o	21	3,393	10	0	291	3,694	11,046
		98n	No reports						
		99o	23	3,145	10	0	286	3,441	253,382
		99n	1	0	0	0	42,000	42,000	42,000
13463-40-6	Iron pentacarbonyl	88	NR	NR	NR	NR	NR	NR	NR
		95	1	1,530	0	0	0	1,530	1,530
		98o	1	1,475	0	0	0	1,475	1,475
		98n	No reports						
		99o	1	1,517	0	0	0	1,517	1,517
		99n	No reports						
78-84-2	Isobutyraldehyde	88	15	685,918	773	60	1	686,752	686,752
		95	24	256,279	752	44,075	47	301,153	301,153
		98o	20	254,460	1,182	0	0	255,642	427,875
		98n	2	165	0	0	0	165	170
		99o	20	259,971	966	0	0	260,937	384,999
		99n	No reports						
25311-71-1 *	Isofenphos	88	NR	NR	NR	NR	NR	NR	NR
		95	4	2,907	0	0	9,000	11,907	23,207
		98o	2	10	0	0	0	10	10
		98n	No reports						
		99o	2	205	0	0	0	205	205
		99n	No reports						
67-63-0 *	Isopropyl alcohol (manufacturing)	88	91	2,001,397	1,900	0	14	2,003,311	2,250,350
		95	72	937,246	0	0	0	937,246	939,823
		98o	68	586,639	250	0	0	586,889	602,990
		98n	11	2,326	0	192,117	0	194,443	237,991
		99o	73	588,377	165	0	9	588,551	594,556
		99n	9	768	0	0	0	768	89,238
80-05-7	4,4'-Isopropylidenediphenol	88	80	226,986	126,385	0	426,065	779,436	1,223,996
		95	114	155,659	5,809	82,000	86,697	330,165	755,836
		98o	122	188,260	7,658	0	67,097	263,015	844,089
		98n	6	262	0	0	56,423	56,685	56,784
		99o	117	169,523	4,783	72	3,282	177,660	742,125
		99n	4	255	0	0	36,740	36,995	37,419
120-58-1	Isosafrole	88	NR	NR	NR	NR	NR	NR	NR
		95	No reports						
		98o	No reports						
		98n	1	0	0	0	0	0	0
		99o	No reports						
		99n	1	2	1	0	0	3	41

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* 3-Iodo-2-propynyl-butylcarbamate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,755	2	0	1	300	62,552	5,151	69,761	2
	98o	30,906	0	400	5,561	334	123,399	6,271	166,871	1
	98n	No reports								
	99o	21,705	0	0	974	329	340,696	11,345	375,049	2
	99n	0	0	0	0	0	0	42,000	42,000	0
Iron pentacarbonyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	1,379	1,379	0
	98o	0	0	0	0	0	0	1,475	1,475	0
	98n	No reports								
	99o	0	0	0	0	0	0	1,517	1,517	0
	99n	No reports								
Isobutyraldehyde	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	9,647	1,193,119	567,515	609,409	76,894	300,129	2,756,713	4
	98o	0	48,000	1,509,037	550,059	1,118,885	118,174	429,051	3,773,206	221
	98n	0	0	0	32,119	15,206	659	165	48,149	0
	99o	10,188	3,800	2,902,392	539,410	1,180,083	36,804	403,453	5,076,130	0
	99n	No reports								
* Isufenphos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	690	0	0	0	0	20,300	11,612	32,602	1
	98o	2,000	0	0	0	0	114	10	2,124	0
	98n	No reports								
	99o	20,000	0	0	0	0	0	210	20,210	0
	99n	No reports								
* Isopropyl alcohol (manufacturing)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	62,894	48,179	2,684,671	93,871	178,156	232,658	743,206	4,043,635	9
	98o	11,355	146,022	3,681,484	123,138	148,574	63,213	627,994	4,801,780	8
	98n	122,891	0	0	925,705	174,862	56,137	193,515	1,473,110	1
	99o	883,141	32,237	8,862,061	172,520	200,129	15,056	594,825	10,759,969	9
	99n	1,076,491	0	0	824,910	197,271	97,618	768	2,197,058	10
4,4'-Isopropylidenediphenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	56,348	2,377	5,024,865	28,758	824,095	127,796	647,242	6,711,481	121,312
	98o	104,158	71,832	9,043,549	98,999	1,636,775	175,248	843,692	11,974,253	3,477
	98n	0	0	0	0	137,341	2,035	56,554	195,930	0
	99o	225,885	52,709	24,844,350	421,160	576,435	748,818	697,896	27,567,253	3,884
	99n	0	0	0	0	282,439	8,222	36,755	327,416	0
Isosafrole	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	77,000	0	37	77,037	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
77501-63-4 *	Lactofen	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	787	0	0	0	787	250	1,037
		98o	1	3	0	0	0	3	0	3
		98n	No reports							
		99o	2	406	0	0	0	406	9	415
		99n	No reports							
7439-92-1 **	Lead	88	865	1,128,042	61,776	0	6,648,926	7,838,744	12,274,686	20,113,430
		95	857	729,998	10,644	0	2,361,516	3,102,158	2,550,311	5,652,469
		98o	810	339,433	13,105	8,613	3,265,491	3,626,642	5,379,837	9,006,479
		98n	52	4,788	138	23,068	12,705,039	12,733,033	1,030,338	13,763,371
		99o	788	350,046	8,336	0	1,234,157	1,592,539	3,123,113	4,715,652
		99n	42	4,004	32	13,250	9,206,640	9,223,926	1,509,420	10,733,346
—	Lead compounds	88	736	1,555,082	180,368	2,755	20,035,359	21,773,564	15,929,201	37,702,765
		95	862	1,228,687	54,994	183,912	13,519,498	14,987,091	19,362,403	34,349,494
		98o	848	854,133	38,804	171,660	16,358,443	17,423,040	16,876,173	34,299,213
		98n	258	350,359	77,080	7,280,139	240,468,619	248,176,197	5,115,886	253,292,083
		99o	814	871,608	31,794	182,869	16,308,361	17,394,632	22,369,198	39,763,830
		99n	234	352,456	33,806	7,959,140	295,159,401	303,504,803	6,900,198	310,405,001
58-89-9 **	Lindane	88	3	258	0	0	0	258	56	314
		95	10	510	0	0	0	510	20	530
		98o	10	26	5	0	0	31	3	34
		98n	6	53	0	0	25,654	25,707	126	25,833
		99o	9	15	5	0	0	20	18	38
		99n	5	15	1	0	0	16	351	367
330-55-2 *	Linuron	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	270	5	0	5	280	1,250	1,530
		98o	2	1,010	5	0	0	1,015	750	1,765
		98n	1	5	0	0	0	5	0	5
		99o	2	1,010	5	0	0	1,015	750	1,765
		99n	2	5	0	0	0	5	0	5
554-13-2	Lithium carbonate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	29	15,824	0	0	0	15,824	601,200	617,024
		98o	43	8,144	250	114	32,284	40,792	292,407	333,199
		98n	No reports							
		99o	44	12,006	501	0	250	12,757	192,891	205,648
		99n	1	0	0	0	11,382	11,382	0	11,382
121-75-5 *	Malathion	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	21	2,512	0	0	0	2,512	31	2,543
		98o	17	2,017	255	0	0	2,272	1,004	3,276
		98n	6	10	0	0	20,222	20,232	159	20,391
		99o	17	5,097	5	0	0	5,102	38	5,140
		99n	3	1	0	0	0	1	0	1

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Lactofen	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	100	0	0	0	0	1	520	621	1,044
	98o	0	0	0	0	0	89	3	92	0
	98n	No reports								
	99o	0	0	0	0	0	156	406	562	0
	99n	No reports								
** Lead	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	208,823,623	59,492,972	49,836	5,662	1,631,361	1,918,683	4,462,867	276,385,004	19,118
	98o	249,087,516	36,680,738	242,740	8,259	1,620,234	747,986	7,317,540	295,705,013	424,985
	98n	414	32,124	0	12,582	0	135,054	13,890,898	14,071,072	71
	99o	213,586,064	49,825,513	0	2,724	1,703,934	561,736	5,174,385	270,854,356	7,737
	99n	3,747	275,832	0	0	340,717	165,312	10,228,676	11,014,284	17
Lead compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	501,647,569	297,656,594	0	62,073	28,890,703	7,378,330	27,393,141	863,028,410	3,713,960
	98o	420,776,967	296,081,977	0	20,817	158,767	3,049,869	42,883,366	762,971,763	1,494,519
	98n	8,472,755	1,141,555	0	31,345	149,746	82,511	255,435,859	265,313,771	62,562
	99o	442,182,690	279,831,652	700	15,768	117,175	2,546,697	38,424,728	763,119,410	29,089,501
	99n	482,650	2,860,198	0	0	424,100	55,538	277,508,918	281,331,404	39,001,932
*,** Lindane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	326	0	0	0	0	3,206	272	3,804	0
	98o	168	0	0	0	0	8,164	126	8,458	1
	98n	0	0	0	100,903	118,134	222	25,833	245,092	1
	99o	1,131	0	0	0	0	60	44	1,235	0
	99n	0	0	0	0	350,078	2,659	193	352,930	0
* Linuron	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	1	0	734	797	1,532	0
	98o	25	0	0	0	0	500	550	1,075	0
	98n	0	0	0	2,214	14,516	0	4	16,734	0
	99o	25	0	0	0	0	500	550	1,075	0
	99n	0	0	0	0	33,900	699	3	34,602	0
Lithium carbonate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	18,000	0	0	0	2,200	690	169,247	190,137	446,000
	98o	48,373	0	0	0	1,400	3,266	301,392	354,431	0
	98n	No reports								
	99o	94,352	0	0	0	5,258	3,109	204,542	307,261	17
	99n	0	0	0	0	0	0	11,382	11,382	0
* Malathion	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	197	0	0	0	0	819	1,073	2,089	1
	98o	1,187	0	0	0	0	1,841	1,649	4,677	1
	98n	0	0	0	0	180,176	0	20,390	200,566	0
	99o	418	0	0	0	0	4,118	4,628	9,164	1
	99n	0	97	0	0	240,221	0	1	240,319	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
108-31-6	Maleic anhydride	88	199	676,778	12,580	240,000	250	929,608	132,148	1,061,756
		95	211	347,371	18	5	1,406	348,800	14,429	363,229
		98o	210	357,365	11	0	4,430	361,806	35,131	396,937
		98n	8	35	0	0	150,000	150,035	10	150,045
		99o	206	378,592	5	0	4,449	383,046	5,555	388,601
		99n	9	161	1	0	62,000	62,162	431	62,593
109-77-3	Malononitrile	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	0	432,956	0	432,956	0	432,956
		98o	4	510	0	111,100	0	111,610	0	111,610
		98n	1	0	0	0	0	0	0	0
		99o	2	10	5	150,985	5	151,005	0	151,005
		99n	3	7	1	0	0	8	163	171
12427-38-2 *	Maneb	88	6	2,265	250	0	0	2,515	5,285	7,800
		95	6	273	0	0	0	273	2,461	2,734
		98o	7	5	0	0	0	5	2,288	2,293
		98n	No reports							
		99o	6	0	0	0	0	0	0	0
		99n	No reports							
7439-96-5	Manganese	88	954	1,586,929	321,993	255	20,229,826	22,139,003	20,087,660	42,226,663
		95	1,605	780,503	117,291	17	8,280,318	9,178,129	13,138,298	22,316,427
		98o	1,806	977,741	260,263	3	10,038,944	11,276,951	15,018,024	26,294,975
		98n	61	24,751	147,150	0	10,771,082	10,942,983	1,053,019	11,996,002
		99o	1,825	802,914	136,695	5	9,661,263	10,600,877	12,832,774	23,433,651
		99n	51	12,131	140,505	0	8,123,209	8,275,845	999,489	9,275,334
—	Manganese compounds	88	545	1,801,453	681,469	6,816,070	84,227,842	93,526,834	20,670,921	114,197,755
		95	1,062	2,925,313	1,655,180	10,403,590	39,732,058	54,716,141	28,748,657	83,464,798
		98o	1,250	1,599,063	4,538,943	7,762,910	52,395,059	66,295,975	42,664,297	108,960,272
		98n	376	537,761	1,015,935	858,700	446,827,046	449,239,442	7,779,405	457,018,847
		99o	1,283	1,880,530	4,853,311	7,011,627	44,913,717	58,659,185	42,990,491	101,649,676
		99n	386	578,324	544,928	1,186,500	411,502,060	413,811,812	8,052,544	421,864,356
93-65-2 **	Mecoprop	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	9	1,816	0	0	0	1,816	2,304	4,120
		98o	10	1,150	0	0	250	1,400	3,968	5,368
		98n	No reports							
		99o	12	1,123	0	0	250	1,373	2,368	3,741
		99n	1	2	0	0	0	2	64	66
149-30-4 *	2-Mercaptoben-zothiazole	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	28	34,857	5	97,000	260	132,122	376,420	508,542
		98o	37	5,404	100,823	45,000	250	151,477	131,778	283,255
		98n	1	0	0	0	250,000	250,000	0	250,000
		99o	34	5,211	66,893	37,000	0	109,104	122,993	232,097
		99n	1	0	0	0	176,304	176,304	0	176,304

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Maleic anhydride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,940	242	3,222,121	102,238	38,356,328	1,154,869	355,050	43,195,788	22,344
	98o	7,607	250	3,857,500	163,967	50,635,701	1,404,589	387,975	56,457,589	12,601
	98n	0	0	0	55,466	79,450	0	150,041	284,957	0
	99o	4,507	272	2,724,748	101,555	43,347,192	1,426,535	376,491	47,981,300	1,533
	99n	0	0	0	222,133	456,582	37,000	62,368	778,083	0
Malononitrile	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	432,956	432,956	0
	98o	0	0	0	0	336,000	0	111,214	447,214	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	22,000	0	151,009	173,009	0
	99n	0	0	0	0	191,547	0	166	191,713	0
* Maneb	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	525	0	0	3	0	8,800	7,861	17,189	0
	98o	35	0	0	0	0	8,521	2,058	10,614	0
	98n	No reports								
	99o	0	0	0	0	0	10,113	2,853	12,966	0
	99n	No reports								
Manganese	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	30,253,675	74,115,194	0	141	173,632	1,894,554	21,471,565	127,908,761	715
	98o	39,006,919	49,624,830	0	543	531,918	1,054,488	23,783,167	114,001,865	623,874
	98n	960	171,563	0	0	113,857	0	11,998,782	12,285,162	8
	99o	42,755,189	69,660,944	0	1	152,697	691,840	22,024,517	135,285,188	18,810,107
	99n	330	179,140	0	0	49,506	0	7,834,732	8,063,708	10
Manganese compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	145,391,027	88,055,551	0	199,783	1,021,862	5,903,439	78,070,750	318,642,412	1,350,559
	98o	22,746,875	47,858,333	22,153	35,980	1,924,058	5,367,241	113,573,597	191,528,237	332,380
	98n	87,296	140,909	0	0	74,724	73,171	456,349,921	456,726,021	70,966
	99o	18,775,581	45,394,140	2,876	58,511	1,536,543	7,046,679	100,965,013	173,779,343	158,189
	99n	769,091	792,731	0	0	16,286	83,200	374,672,667	376,333,975	47,000,046
** Mecoprop	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	15,614	0	0	0	940	1,037	3,659	21,250	1
	98o	872	0	0	1,000	500	451	4,887	7,710	0
	98n	No reports								
	99o	2,611	0	0	0	440	632	3,587	7,270	0
	99n	0	0	0	0	11,879	0	67	11,946	0
* 2-Mercaptobenzothiazole	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	5,405	104,645	0	931,100	128,323	136,948	516,905	1,823,326	632
	98o	1,780	8,475	0	800,961	513,059	76,774	282,961	1,684,010	0
	98n	0	0	0	0	0	0	250,000	250,000	0
	99o	207,850	50,116	0	601,890	527,221	11,170	237,876	1,636,123	1
	99n	0	0	0	0	0	0	176,304	176,304	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
7439-97-6 *	Mercury	88	37	22,905	1,397	0	13,279	37,581	258,718	296,299
		95	24	13,262	192	0	1,016	14,470	14,228	28,698
		98o	24	12,591	134	0	3,069	15,794	14,827	30,621
		98n	10	9,416	0	0	236,003	245,419	14,418	259,837
		99o	33	11,275	133	0	2,419	13,827	6,575	20,402
		99n	14	9,426	0	0	98,316	107,742	14,956	122,698
—	Mercury compounds	88	15	2,376	9	27	0	2,412	17,916	20,328
		95	10	3,156	136	6	0	3,298	207,097	210,395
		98o	11	2,372	34	0	2,550	4,956	19,848	24,804
		98n	11	5,277	22	0	8,969,110	8,974,409	72,802	9,047,211
		99o	13	2,110	36	0	5,700	7,846	53,046	60,892
		99n	17	3,666	9	0	3,059,271	3,062,946	89,129	3,152,075
150-50-5 *	Merphos	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	186	0	0	0	186	0	186
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	13	0	0	13	0	13
		99n	No reports							
126-98-7	Methacrylonitrile	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	6	945	0	606,939	0	607,884	0	607,884
		98o	6	900	0	107,076	0	107,976	0	107,976
		98n	2	800	0	0	0	800	0	800
		99o	6	950	0	102,418	0	103,368	0	103,368
		99n	3	112	1	0	22,932	23,045	12,387	35,432
137-42-8 *	Metham sodium	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	11	4,387	1	0	252	4,640	13,050	17,690
		98o	9	5,714	40	0	110	5,864	800	6,664
		98n	2	824	0	0	22,248	23,072	0	23,072
		99o	9	6,357	40	0	110	6,507	220	6,727
		99n	1	3,627	0	0	0	3,627	0	3,627
67-56-1 *	Methanol	88	2,507	259,691,589	17,139,114	26,587,686	11,911,136	315,329,525	15,290,643	330,620,168
		95	2,486	217,605,051	9,223,362	27,738,543	1,776,256	256,343,212	1,956,802	258,300,014
		98o	2,238	190,456,559	5,859,092	16,681,250	1,800,269	214,797,170	877,673	215,674,843
		98n	371	944,235	5,144	1,125,538	605,659	2,680,576	90,540	2,771,116
		99o	2,161	183,874,487	3,864,475	14,190,039	1,211,207	203,140,208	1,366,054	204,506,262
		99n	354	945,704	8,905	1,992,807	707,037	3,654,453	116,658	3,771,111
2032-65-7 *	Methiocarb	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Mercury	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	413,832	58,151	0	0	6,307	11,009	17,996	507,295	2
	98o	455,629	34,068	0	0	4,315	1,165	20,609	515,786	1
	98n	0	0	0	0	0	0	260,436	260,436	0
	99o	471,573	37,688	0	0	4,021	5,495	18,720	537,497	12
	99n	0	307	0	0	0	0	122,294	122,601	1
Mercury compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	125,287	0	0	61	0	4,597	25,638	155,583	179,000
	98o	573,026	5	0	0	0	5,411	18,413	596,855	860
	98n	65,400	114,138	0	0	0	236	9,046,771	9,226,545	2
	99o	390,415	2,789	0	0	0	187	57,982	451,373	2,400
	99n	43,155	87,463	0	0	0	550	3,133,514	3,264,682	15,002
* Merphos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	186	186	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	155	12	13	180	0
	99n	No reports								
Methacrylonitrile	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	3,189	0	607,884	611,073	0
	98o	0	0	0	0	500	0	107,976	108,476	0
	98n	0	0	0	1,891,340	0	0	800	1,892,140	1
	99o	0	0	0	0	320	0	103,368	103,688	0
	99n	0	0	0	0	73,099	0	35,431	108,530	0
* Metham sodium	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	33,520	0	0	0	102	362	15,378	49,362	0
	98o	100	0	0	0	355	3,324	6,354	10,133	1,000
	98n	0	0	0	0	0	0	24,392	24,392	0
	99o	100	0	0	0	748	10,472	6,866	18,186	100
	99n	9,000	0	0	0	0	5,970	3,600	18,570	0
* Methanol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	441,801,827	28,205,153	376,980,271	94,135,080	955,830,551	119,880,621	262,620,706	2,279,454,209	295,175
	98o	620,419,622	13,003,212	299,098,472	93,547,811	1,065,010,404	125,152,243	216,866,982	2,433,098,746	110,258
	98n	3,746,596	130,289	8,256,769	33,838,262	15,712,702	2,607,799	2,871,641	67,164,058	1,926
	99o	621,790,741	23,751,988	435,290,112	102,913,751	1,114,616,616	113,217,331	206,036,612	2,617,617,151	189,597
	99n	3,882,000	32,667	5,534,648	21,781,897	17,730,075	2,397,843	3,686,694	55,045,824	5,733
* Methiocarb	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
94-74-6	*,** Methoxone	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	1,261	0	0	0	1,261	1,810	3,071
		98o	6	1,255	0	0	250	1,505	3,749	5,254
		98n	No reports							
		99o	5	780	0	0	250	1,030	2,887	3,917
		99n	2	2	0	0	0	2	314	316
72-43-5	* Methoxychlor	88	12	131,031	252	0	258	131,541	8	131,549
		95	2	0	0	0	0	0	0	0
		98o	4	0	0	0	0	0	0	0
		98n	4	12	0	0	25,474	25,486	0	25,486
		99o	5	0	0	0	0	0	0	0
		99n	3	29	0	0	0	29	14	43
109-86-4	* 2-Methoxyethanol	88	95	5,899,669	40,520	750	7	5,940,946	57,362	5,998,308
		95	48	898,128	12,407	0	5	910,540	536	911,076
		98o	52	1,019,820	16,882	0	400	1,037,102	84	1,037,186
		98n	14	329	0	51,963	0	52,292	884	53,176
		99o	41	972,375	20,648	0	17,098	1,010,121	16,545	1,026,666
		99n	14	121	1	0	56,000	56,122	889	57,011
96-33-3	Methyl acrylate	88	61	443,496	1,687	200	30,260	475,643	4,765	480,408
		95	71	335,178	5,962	159	0	341,299	865	342,164
		98o	64	246,310	761	53,244	0	300,315	50,575	350,890
		98n	8	24,273	0	0	14,000	38,273	3,680	41,953
		99o	63	303,175	624	51,742	267	355,808	28,796	384,604
		99n	4	2,216	0	0	0	2,216	498,922	501,138
1634-04-4	Methyl tert-butyl ether	88	90	2,588,247	21,499	14,400	370	2,624,516	4,602	2,629,118
		95	184	3,300,759	78,555	15,238	3,800	3,398,352	47,841	3,446,193
		98o	207	2,624,981	60,650	47,357	325	2,733,313	216,391	2,949,704
		98n	328	1,554,325	7,161	250	2,884	1,564,620	46,503	1,611,123
		99o	188	2,469,175	118,824	20,477	5,586	2,614,062	235,645	2,849,707
		99n	298	1,243,847	2,286	0	1,020	1,247,153	22,627	1,269,780
79-22-1	Methyl chlorocarbonate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	2,895	5	0	5	2,905	0	2,905
		98o	4	2,352	5	0	5	2,362	0	2,362
		98n	1	0	0	0	0	0	0	0
		99o	4	3,203	5	0	5	3,213	0	3,213
		99n	3	31	1	0	0	32	162	194
101-14-4	**, 4,4'-Methylenebis (2-chloroaniline)	88	8	250	0	0	0	250	0	250
		95	23	260	0	0	0	260	5	265
		98o	23	20	0	0	0	20	0	20
		98n	1	0	0	0	0	0	0	0
		99o	17	10	0	0	0	10	0	10
		99n	3	30	1	0	8,189	8,220	4,419	12,639

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
*** Methoxone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	19,510	0	0	0	58	27	3,144	22,739	0
	98o	6,670	0	0	0	0	1,301	5,417	13,388	0
	98n	No reports								
	99o	1,092	0	0	0	0	723	4,226	6,041	0
	99n	0	0	0	0	110,530	0	97	110,627	0
* Methoxychlor	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	0	0	0	0	30,194	0	25,486	55,680	0
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	206,422	0	43	206,465	0
* 2-Methoxyethanol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	3,925,200	74,000	240,658	1,885,948	3,357,857	1,228,013	904,103	11,615,779	728
	98o	279,700	151,007	742,247	1,760,218	3,343,057	466,416	1,093,500	7,836,145	403
	98n	137	0	0	1,275,726	150,702	0	53,249	1,479,814	1
	99o	710,480	200,000	1,236,963	507,350	3,591,280	466,905	1,019,215	7,732,193	0
	99n	573	0	0	34,972	254,416	0	57,116	347,077	0
Methyl acrylate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	910,001	40,769	736,924	249,260	2,132,688	51,535	346,087	4,467,264	249
	98o	1,067,301	0	702,681	458,653	3,323,941	75,468	422,545	6,050,589	3
	98n	0	0	0	291,314	88,974	163	18,343	398,794	25,189
	99o	942,001	140	545,151	648,816	2,397,322	232,417	380,856	5,146,703	2
	99n	0	0	0	6,441	43,108	38	2,201	51,788	498,922
Methyl tert-butyl ether	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	847,069	32,815	228,033	1,360,313	3,020,968	522,838	3,430,405	9,442,441	117,520
	98o	2,207,480	170,245	1,798,255	3,330,091	6,337,891	1,233,832	2,984,663	18,062,457	1,771
	98n	2,462,506	1,800,430	0	188,044	2,628,152	193,278	3,422,976	10,695,386	32,739
	99o	2,998,495	682	2,063,051	3,391,282	17,686,628	1,081,736	2,580,818	29,802,692	297,865
	99n	5,250,530	135,600	5,519	1,091,655	3,183,495	208,396	1,242,529	11,117,724	5,594
Methyl chloro-carbonate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	3,610	0	2,897	6,507	0
	98o	0	0	0	0	51,910	0	3,030	54,940	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	39,801	0	3,023	42,824	0
	99n	0	0	0	0	173,861	0	190	174,051	0
** 4,4'-Methylenebis (2-chloroaniline)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	720	0	0	1,872	36	10,345	37	13,010	0
	98o	0	0	0	4,169	0	9,787	10	13,966	1
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	2,997	0	9,305	6	12,308	1
	99n	0	0	0	0	133,212	0	12,635	145,847	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
101-61-1 **	4,4'-Methylenebis (N,N-dimethyl) benzeneamine	88	1	250	0	0	7,000	7,250	1,150	8,400
		95	2	10	0	0	0	10	0	10
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
74-95-3	Methylene bromide	88	9	57,723	0	0	0	57,723	0	57,723
		95	5	63,091	0	0	0	63,091	0	63,091
		98o	5	46,153	0	0	0	46,153	0	46,153
		98n	3	160	0	0	0	160	0	160
		99o	3	12,352	0	0	0	12,352	29	12,381
		99n	1	15	1	0	0	16	7	23
101-77-9 **	4,4'-Methylenedianiline	88	31	130,265	2,599	460,250	1,140	594,254	141,538	735,792
		95	25	10,337	63	23,110	0	33,510	9,423	42,933
		98o	25	9,073	5,041	51,200	0	65,314	6,867	72,181
		98n	1	0	0	0	0	0	0	0
		99o	23	9,199	4,248	33,000	8	46,455	31,768	78,223
		99n	1	0	0	0	0	0	0	0
78-93-3 *	Methyl ethyl ketone	88	2,534	141,566,241	92,216	255,955	166,688	142,081,100	5,014,726	147,095,826
		95	2,322	70,270,116	65,782	581,632	172,000	71,089,530	260,891	71,350,421
		98o	1,906	46,487,938	54,732	343,418	116,504	47,002,592	844,925	47,847,517
		98n	290	220,956	7	52,251	130	273,344	215,904	489,248
		99o	1,738	38,218,669	34,304	426,252	81,521	38,760,746	745,597	39,506,343
		99n	276	190,677	15	65,858	168,607	425,157	648,957	1,074,114
60-34-4	Methyl hydrazine	88	3	2,927	1	0	0	2,928	1,450	4,378
		95	3	500	0	0	0	500	0	500
		98o	3	265	0	0	0	265	0	265
		98n	No reports							
		99o	4	401	0	0	0	401	0	401
		99n	2	6	0	0	0	6	195	201
74-88-4	Methyl iodide	88	3	8,944	5	250	0	9,199	250	9,449
		95	6	21,618	0	10,000	0	31,618	8,600	40,218
		98o	10	65,167	45	131	1,357	66,700	329	67,029
		98n	2	0	0	0	0	0	0	0
		99o	10	67,682	7	24	742	68,455	0	68,455
		99n	3	215	1	0	17,745	17,961	9,575	27,536
108-10-1 *	Methyl isobutyl ketone	88	1,011	32,035,833	762,108	116,650	31,770	32,946,361	1,966,488	34,912,849
		95	1,025	21,962,743	51,292	158,600	7,041	22,179,676	86,438	22,266,114
		98o	834	14,933,309	17,655	75,950	13,846	15,040,760	166,344	15,207,104
		98n	208	33,691	0	250	45	33,986	37,568	71,554
		99o	783	14,233,870	19,591	79,800	21,724	14,354,985	170,604	14,525,589
		99n	208	32,070	1	0	26,815	58,886	66,631	125,517

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** 4,4'-Methylenebis (N,N-dimethyl) benzeneamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	10	10	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
Methylene bromide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	677,059	0	0	0	51,903	979	62,284	792,225	0
	98o	1,500,000	0	0	0	0	0	46,135	1,546,135	0
	98n	0	0	0	64,300	354,774	0	160	419,234	1
	99o	40	0	0	0	0	0	12,348	12,388	0
	99n	0	0	0	0	37,000	0	19	37,019	0
** 4,4'-Methylenedianiline	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,300	0	17,801	17,405	87,919	94,872	35,337	255,634	10
	98o	2,830	0	311,271	11,793	407,691	56,581	66,591	856,757	1
	98n	0	0	0	0	11,263	0	0	11,263	0
	99o	6,205	0	45,995	4,157	263,766	99,971	48,589	468,683	8
	99n	0	0	0	0	12,386	0	0	12,386	0
* Methyl ethyl ketone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	67,669,904	21,215,191	112,592,049	43,763,276	71,390,260	6,395,059	70,181,202	393,206,941	229,659
	98o	56,938,489	19,736,392	80,609,200	33,340,694	80,552,807	7,723,606	48,458,539	327,359,727	169,435
	98n	16,578,184	1,888,930	119,057	41,297,790	5,164,871	5,030,850	323,283	70,402,965	12,267
	99o	52,596,106	16,568,581	96,034,050	32,174,014	85,279,339	9,174,989	39,418,158	331,245,237	436,890
	99n	17,623,465	6,917	140,361	32,590,870	7,267,122	6,720,764	481,209	64,830,708	39,430
Methyl hydrazine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	20	5	400	425	0
	98o	0	0	0	0	6,508	192	370	7,070	0
	98n	No reports								
	99o	0	0	0	0	3,405	5,967	506	9,878	0
	99n	0	0	0	0	127,742	0	201	127,943	0
Methyl iodide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	140	0	19,376	760	40,187	60,463	59
	98o	0	0	0	0	184,842	31,143	66,328	282,313	421
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	4,300	0	24,001	358	68,906	97,565	0
	99n	0	0	0	0	118,249	0	27,535	145,784	0
* Methyl isobutyl ketone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	52,705,598	16,396,008	27,176,665	18,129,738	17,804,641	1,902,661	22,220,141	156,335,452	50,004
	98o	58,935,157	10,827,382	28,641,669	10,705,754	14,320,793	2,734,198	15,213,236	141,378,189	166,714
	98n	5,155,390	110,732	21,764	15,671,143	1,875,406	1,569,508	51,396	24,455,339	1,756
	99o	45,929,749	11,479,787	28,129,923	9,939,821	14,297,402	1,985,317	14,591,319	126,353,318	333,768
	99n	5,833,896	144,852	16,000	15,461,505	3,538,063	2,403,011	88,173	27,485,500	5,146

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
624-83-9	Methyl isocyanate	88	12	10,235	0	0	64	10,299	8,400	18,699
		95	5	1,658	0	0	0	1,658	0	1,658
		98o	5	507	0	0	5	512	0	512
		98n	No reports							
		99o	3	438	0	0	1	439	0	439
		99n	2	4	0	0	0	4	153	157
556-61-6	* Methyl isothiocyanate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	1,586	0	0	0	1,586	0	1,586
		98o	3	1,359	0	0	0	1,359	0	1,359
		98n	No reports							
		99o	3	1,091	0	0	0	1,091	0	1,091
		99n	No reports							
75-86-5	2-Methyl lactonitrile	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	3,852	0	0	0	3,852	0	3,852
		98o	7	3,973	0	56,698	0	60,671	0	60,671
		98n	2	10	0	24,000	0	24,010	147	24,157
		99o	6	3,772	0	55,487	0	59,259	0	59,259
		99n	3	3	0	15,000	0	15,003	169	15,172
80-62-6	Methyl methacrylate	88	218	3,630,569	28,437	327,220	8,119	3,994,345	276,567	4,270,912
		95	267	2,113,207	1,672	120,000	1,056	2,235,935	124,867	2,360,802
		98o	283	2,233,520	437,470	150,000	1,872	2,822,862	332,939	3,155,801
		98n	14	11,821	0	17,206	9,700	38,727	1,418	40,145
		99o	290	4,360,784	3,343	62,000	7,904	4,434,031	508,265	4,942,296
		99n	19	6,086	1	0	43,660	49,747	24,584	74,331
924-42-5	N-Methylolacrylamide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	29	2,835	1,171	0	38	4,044	13	4,057
		98o	36	5,473	1,245	0	45	6,763	24,987	31,750
		98n	No reports							
		99o	35	6,178	1,259	0	53	7,490	3,648	11,138
		99n	No reports							
298-00-0	* Methyl parathion	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	1,442	0	0	0	1,442	2,684	4,126
		98o	5	189	0	0	0	189	0	189
		98n	No reports							
		99o	5	15	0	0	0	15	0	15
		99n	1	0	0	0	0	0	0	0
109-06-8	2-Methylpyridine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	8	89,938	0	61,720	0	151,658	40	151,698
		98o	7	2,934	0	38,900	0	41,834	813	42,647
		98n	1	0	0	0	0	0	0	0
		99o	7	16,802	0	50,100	0	66,902	6	66,908
		99n	3	13	1	0	0	14	258	272

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Methyl isocyanate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	66,939	0	1,658	68,597	0
	98o	0	0	0	3,450	90,771	0	497	94,718	5
	98n	No reports								
	99o	0	0	0	0	6,393	32	2,310	8,735	0
	99n	0	0	0	0	111,931	0	157	112,088	0
* Methyl isothiocyanate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	62	0	82	1,586	1,730	0
	98o	0	0	0	0	0	120	1,359	1,479	0
	98n	No reports								
	99o	0	0	0	48	0	72	1,091	1,211	0
	99n	No reports								
2-Methylacetonitrile	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	24,052	0	3,853	27,905	0
	98o	0	0	0	0	9,268	0	61,231	70,499	1
	98n	0	0	0	0	0	6	24,010	24,016	1
	99o	0	0	0	0	9,280	5	59,252	68,537	0
	99n	0	0	0	0	98,944	3	15,105	114,052	0
Methyl methacrylate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,665,497	20,746	2,049,934	1,396,720	5,135,771	697,747	2,258,315	16,224,730	3,255
	98o	1,483,426	58,753	2,254,439	1,793,672	4,004,435	578,962	3,175,808	13,349,495	8,256
	98n	63,000	0	0	942,771	962,274	9,146	34,953	2,012,144	2
	99o	1,766,009	47,419	1,979,196	2,109,271	5,487,258	786,030	3,340,095	15,515,278	17,410
	99n	76,679	0	0	225,772	703,641	3,836	73,830	1,083,758	2
N-Methylolacrylamide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	360	0	0	294	14,277	4,373	3,096	22,400	4
	98o	0	113	0	0	12,400	7,425	31,759	51,697	99
	98n	No reports								
	99o	0	120	0	0	12,607	8,373	11,151	32,251	1
	99n	No reports								
* Methyl parathion	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	29	0	0	0	0	0	3,664	3,693	1
	98o	0	0	0	0	0	47,000	8,531	55,531	0
	98n	No reports								
	99o	0	0	0	0	0	23,992	6,501	30,493	1
	99n	0	0	0	0	21,609	0	0	21,609	0
2-Methylpyridine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	57,000	19,000	470	37,000	98,212	150,962	362,644	930
	98o	0	140,000	42,139	12	3	330	42,674	225,158	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	170,000	34,963	5,110	40,610	1,475	66,951	319,109	1,000
	99n	0	0	0	0	267,046	0	267	267,313	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
872-50-4	N-Methyl-2-pyrrolidone	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	277	2,719,267	201,221	779,477	135,050	3,835,015	367,111	4,202,126
		98o	400	3,009,700	42,961	2,865,692	99,411	6,017,764	494,760	6,512,524
		98n	79	19,299	0	0	0	19,299	3,165	22,464
		99o	400	3,324,415	35,538	2,945,457	96,877	6,402,287	518,208	6,920,495
		99n	83	18,640	0	0	43,322	61,962	88,106	150,068
21087-64-9 *	Metribuzin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	1,936	9	0	0	1,945	0	1,945
		98o	8	339	26	0	0	365	255	620
		98n	No reports							
		99o	9	397	68	0	1	466	250	716
		99n	1	0	0	0	0	0	0	0
7786-34-7 *	Mevinphos	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
90-94-8 **	Michler's ketone	88	4	1,100	0	0	0	1,100	0	1,100
		95	1	1,577	0	0	0	1,577	0	1,577
		98o	1	511	0	0	0	511	0	511
		98n	No reports							
		99o	2	869	0	0	0	869	0	869
		99n	No reports							
2212-67-1 *	Molinate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	695	502	0	0	1,197	6,363	7,560
		98o	3	1,063	113	0	0	1,176	8,305	9,481
		98n	No reports							
		99o	4	1,698	116	0	0	1,814	7,997	9,811
		99n	1	2	0	0	0	2	60	62
1313-27-5	Molybdenum trioxide	88	102	111,195	139,021	197,115	97,238	544,569	573,624	1,118,193
		95	162	179,060	27,305	333,730	77,604	617,699	1,029,058	1,646,757
		98o	169	198,560	36,018	302,000	48,888	585,466	579,619	1,165,085
		98n	20	22,062	312	5	899,506	921,885	148,188	1,070,073
		99o	172	100,444	36,086	117,120	111,465	365,115	1,020,663	1,385,778
		99n	20	14,619	758	0	549,738	565,115	179,240	744,355
76-15-3	Monochloropenta-fluoroethane (CFC-115)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	14	275,259	2,854	3	0	278,116	7	278,123
		98o	7	76,256	5	0	0	76,261	0	76,261
		98n	1	6,852	0	0	0	6,852	0	6,852
		99o	5	65,485	5	0	0	65,490	0	65,490
		99n	1	11,129	0	0	0	11,129	0	11,129

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
N-Methyl-2-pyrrolidone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,477,378	6,548,234	182,638	2,482,544	5,116,412	3,415,140	4,463,576	23,685,922	994
	98o	404,233	7,402,797	2,802,735	3,563,334	5,279,633	3,758,376	6,627,271	29,838,379	4,499
	98n	8,842,325	6	391	2,519,825	874,778	336,833	22,223	12,596,381	3
	99o	674,557	6,525,196	5,737,630	4,322,405	4,675,190	3,580,302	6,928,552	32,443,832	473
	99n	6,486,530	970,518	1,850	3,876,145	940,859	1,335,324	63,131	13,674,357	12
* Metribuzin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	3,502	5,423	3,519	12,444	0
	98o	0	0	0	0	4,596	48,209	140	52,945	0
	98n	No reports								
	99o	0	0	0	0	19,899	63,938	7,849	91,686	0
	99n	0	0	0	0	19,614	0	0	19,614	0
* Mevinphos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
** Michler's ketone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	436	0	0	1,577	2,013	0
	98o	0	0	0	305	14,098	0	511	14,914	0
	98n	No reports								
	99o	0	0	290,000	309	11,720	86	632	302,747	0
	99n	No reports								
* Molinate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	3,312	128,004	6,450	137,766	0
	98o	0	0	0	0	9,646	67,166	10,483	87,295	0
	98n	No reports								
	99o	0	0	0	0	4,732	16,348	7,211	28,291	2,504
	99n	0	0	0	0	11,125	0	62	11,187	0
Molybdenum trioxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	6,201,074	2,454,463	0	3,530	51,382	346,576	1,614,949	10,671,974	21,640
	98o	3,589,437	3,019,402	0	0	132,214	466,140	1,725,386	8,932,579	110
	98n	0	0	0	0	42,786	0	1,557,562	1,600,348	5
	99o	3,286,213	1,694,027	511	46,400	36,387	329,180	1,589,089	6,981,807	1,898
	99n	0	0	0	0	63,467	0	779,849	843,316	3
Monochloropenta-fluoroethane (CFC-115)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	8,600	2,200	0	0	257,501	24,651	278,151	571,103	2
	98o	2,000	36,230	0	0	3,137	258	76,257	117,882	1
	98n	0	0	0	0	0	0	5,340	5,340	1,512
	99o	0	34,344	0	0	4,683	0	28,190	67,217	37,300
	99n	0	0	0	0	0	0	11,129	11,129	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On-site Releases	Transfers Off-site to Disposal	
				Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
88671-89-0 *	Myclobutanil	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	0	0	0	0	0	0
		98o	3	1,000	0	0	0	1,000	0	1,000
		98n	No reports							
		99o	5	1,000	0	0	0	1,000	0	1,000
		99n	No reports							
142-59-6 *	Nabam	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	0	0	0	0	0	0	0
		98o	5	0	4,864	0	0	4,864	0	4,864
		98n	1	0	0	0	0	0	0	0
		99o	4	0	0	0	0	0	0	0
		99n	No reports							
300-76-5 *	Naled	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	50	0	0	0	50	2,200	2,250
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
91-20-3 *	Naphthalene	88	420	5,165,426	22,518	50,946	123,697	5,362,587	1,359,184	6,721,771
		95	539	2,720,145	43,352	44,318	44,782	2,852,597	474,106	3,326,703
		98o	536	3,366,712	34,180	191,677	1,262,478	4,855,047	824,557	5,679,604
		98n	221	91,949	296	5	11,028	103,278	122,188	225,466
		99o	539	2,584,505	38,374	166,054	51,279	2,840,212	640,923	3,481,135
		99n	199	101,346	580	5	93,832	195,763	100,248	296,011
134-32-7 **	alpha-Naphthylamine	88	3	590	101	0	0	691	0	691
		95	1	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	1	0	0	0	0	0	0	0
		99o	2	0	0	0	0	0	0	0
		99n	3	7	1	0	0	8	164	172
91-59-8	beta-Naphthylamine	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	1	2	1	0	0	3	5	8
7440-02-0 **	Nickel	88	1,182	452,669	90,636	14,295	1,225,251	1,782,851	7,661,144	9,443,995
		95	1,993	325,693	25,512	6,370	371,521	729,096	3,977,835	4,706,931
		98o	2,184	421,504	27,123	19,654	305,710	773,991	3,273,758	4,047,749
		98n	59	42,295	4,286	110,158	4,908,158	5,064,897	4,510,891	9,575,788
		99o	2,172	270,983	25,082	16,689	268,497	581,251	3,815,020	4,396,271
		99n	45	39,761	1,496	250	4,044,509	4,086,016	3,695,504	7,781,520

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Myclobutanol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	794	243	1,037	0
	98n	No reports								
	99o	0	0	0	0	0	2,116	455	2,571	0
	99n	No reports								
* Nabam	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	14,218	253	0	14,471	1
	98o	0	0	192	0	7,352	0	4,864	12,408	1
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	0	0	0	0	1
	99n	No reports								
* Naled	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1,000	2,600	0	3,600	9
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Naphthalene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	10,707,785	290,167	5,301,914	1,882,043	8,473,426	1,219,590	3,089,853	30,964,778	351,893
	98o	5,092,370	474,960	6,774,298	1,682,298	4,683,384	1,010,148	4,790,729	24,508,187	81,897
	98n	1,181,526	33,469	5,104	22,735,868	846,984	94,138	108,993	25,006,082	57,356
	99o	14,439,008	528,949	71,190,742	2,364,095	6,298,339	671,103	3,519,377	99,011,613	31,400
	99n	432,197	43,131	4,485	856,986	2,647,239	130,326	219,729	4,334,093	11,733
** alpha-Naphthylamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	243,339	0	165	243,504	0
beta-Naphthylamine	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	118,000	0	3	118,003	0
** Nickel	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	38,218,815	80,925,603	127	767	1,537,254	1,016,815	3,426,329	125,125,710	19,229
	98o	36,514,243	78,058,365	38,720	1,899	319,356	550,986	3,710,365	119,193,934	10,743
	98n	18,430	122,923	0	0	20,200	3,187	10,096,021	10,260,761	5
	99o	27,380,098	79,458,074	0	575	849,109	544,791	4,161,135	112,393,782	160,779
	99n	16,954	169,110	0	0	72,021	4,325	8,092,504	8,354,914	4

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

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Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
—	** Nickel compounds	88	580	274,176	132,233	224,968	2,384,594	3,015,971	6,210,073	9,226,044
		95	921	268,510	61,711	146,886	2,478,360	2,955,467	6,294,090	9,249,557
		98o	1,051	380,608	131,897	146,481	5,696,069	6,355,055	5,109,524	11,464,579
		98n	324	729,850	292,411	337,213	50,626,213	51,985,687	6,035,387	58,021,074
		99o	1,070	465,624	83,621	209,998	2,687,583	3,446,826	5,256,783	8,703,609
		99n	313	726,201	160,443	181,012	53,474,317	54,541,973	5,585,304	60,127,277
—	Nicotine and salts	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	22	365,639	755	0	135	366,529	288,712	655,241
		98o	31	325,882	706	0	0	326,588	287,471	614,059
		98n	2	3	0	0	0	3	250	253
		99o	34	286,683	586	0	0	287,269	758,433	1,045,702
		99n	3	19	0	0	0	19	889	908
1929-82-4	* Nitrapyrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	7	119,451	0	0	119,458	0	119,458
		98o	3	1	0	0	0	1	0	1
		98n	No reports							
		99o	5	1	0	0	0	1	0	1
		99n	No reports							
—	Nitrate compounds	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1,289	424,384	163,486,435	48,046,406	8,240,682	220,197,907	5,955,429	226,153,336
		98o	1,516	369,417	211,792,053	47,186,839	6,148,536	265,496,845	3,875,049	269,371,894
		98n	101	5,994	2,921,416	5,936,287	5,534,253	14,397,950	696,696	15,094,646
		99o	1,724	2,029,922	229,551,038	42,176,345	7,002,519	280,759,824	10,488,727	291,248,551
		99n	92	751	1,816,127	4,565,634	6,379,679	12,762,191	540,798	13,302,989
7697-37-2	* Nitric acid	88	1,921	8,277,993	1,380,565	25,485,680	580,695	35,724,933	7,929,318	43,654,251
		95	1,845	2,595,864	46,586	18,755,717	293,009	21,691,176	4,348,694	26,039,870
		98o	1,839	2,384,260	47,650	18,869,510	228,430	21,529,850	922,139	22,451,989
		98n	149	369,560	13,005	5,300,750	63,544	5,746,859	212,902	5,959,761
		99o	1,789	2,240,309	60,181	16,482,141	347,611	19,130,242	7,982,894	27,113,136
		99n	141	594,480	0	6,328,468	60,018	6,982,966	207,213	7,190,179
139-13-9	** Nitritotriacetic acid	88	14	2,500	5,100	0	5,100	12,700	250	12,950
		95	7	1	34	2,900	0	2,935	0	2,935
		98o	14	1,407	10,202	2,400	0	14,009	0	14,009
		98n	1	0	0	0	11,617	11,617	0	11,617
		99o	12	600	6,320	1,600	0	8,520	0	8,520
		99n	No reports							
100-01-6	p-Nitroaniline	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	11,205	2	0	0	11,207	0	11,207
		98o	4	12,053	0	0	0	12,053	0	12,053
		98n	1	5	0	0	0	5	500	505
		99o	4	11,950	0	0	0	11,950	0	11,950
		99n	1	27	0	0	7,644	7,671	4,119	11,790

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

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**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** Nickel compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	14,059,034	36,140,048	0	2,120	5,609,537	1,144,655	7,853,299	64,808,693	332,672
	98o	7,709,418	29,672,749	5,035	357	651,048	764,503	11,769,938	50,573,048	710,361
	98n	255,905	1,054,608	0	1,330	197,447	110,741	58,014,875	59,634,906	4,759
	99o	6,666,754	31,037,792	2,900	27,271	625,947	808,942	8,891,601	48,061,207	416,161
	99n	982,507	1,274,770	0	0	35,156	99,979	54,840,209	57,232,621	5,230,053
Nicotine and salts	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	34,602	0	0	275,790	297,376	652,796	1,260,564	0
	98o	0	7,611	0	0	827,884	645,409	621,865	2,102,769	8,449
	98n	0	0	0	0	148,971	0	54	149,025	0
	99o	2,877	4,692	0	0	797,497	541,900	547,463	1,894,429	0
	99n	0	0	0	0	613,391	0	717	614,108	0
* Nitrapyrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	7,100	0	380	128,628	136,108	0
	98o	0	0	0	0	0	140	1	141	0
	98n	No reports								
	99o	0	0	0	0	0	140	1	141	0
	99n	No reports								
Nitrate compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	95,092,956	2,841,878	0	0	52,526,430	103,042,941	246,388,238	499,892,443	110,098
	98o	113,724,099	2,184,126	0	59,241	100,734,013	131,680,250	283,368,903	631,750,632	132,931
	98n	3,653,825	8,473	0	0	2,780,478	1,019,036	16,384,222	23,846,034	876
	99o	95,489,390	1,853,837	0	55,902	112,459,069	138,992,642	318,427,444	667,278,284	560,708
	99n	2,904,592	17,342	0	0	3,482,309	1,467,961	13,711,593	21,583,797	1,278
* Nitric acid	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	28,683,640	3,881,357	250,245	255	245,373,000	17,477,013	27,100,441	322,765,951	119,089
	98o	49,798,305	3,817,017	0	148	303,790,960	17,725,571	22,347,015	397,479,016	27,600
	98n	1,907	365	0	14,386	9,396,283	468,458	6,302,073	16,183,472	11
	99o	48,883,250	2,808,384	14,434	0	335,720,018	15,145,057	27,257,843	429,828,986	4,672
	99n	0	0	0	0	10,534,260	538,110	7,181,493	18,253,863	15
** Nitrilotriacetic acid	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,500	0	0	0	969,141	1,872	2,935	976,448	0
	98o	0	0	0	0	1,070,287	27,440	14,009	1,111,736	0
	98n	0	0	0	0	0	0	11,617	11,617	0
	99o	0	0	0	0	727,119	142	8,520	735,781	0
	99n	No reports								
p-Nitroaniline	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	7	0	266	93,016	12,007	105,296	0
	98o	0	0	0	0	0	169,426	12,253	181,679	0
	98n	0	0	0	0	28,500	1	150	28,651	0
	99o	0	0	0	0	0	86,550	12,200	98,750	1
	99n	0	0	0	0	1,249	0	11,790	13,039	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
99-59-2	5-Nitro-o-anisidine	88	No reports							
		95	1	10	0	0	0	10	0	10
		98o	1	10	5	0	0	15	0	15
		98n	No reports							
		99o	1	10	5	0	0	15	0	15
		99n	No reports							
98-95-3	*,** Nitrobenzene	88	19	41,279	7,283	819,000	3,538	871,100	69,570	940,670
		95	17	25,529	874	330,344	43	356,790	961	357,751
		98o	17	79,943	902	407,090	62	487,997	11,324	499,321
		98n	10	504	250	15,529	0	16,283	1,059	17,342
		99o	21	76,723	372	160,441	65	237,601	50,035	287,636
		99n	13	551	0	50,906	0	51,457	13,877	65,334
55-63-0	Nitroglycerin	88	22	52,383	2,746	0	11,640	66,769	2	66,771
		95	20	26,087	13,300	0	0	39,387	0	39,387
		98o	22	52,414	4,713	0	0	57,127	266	57,393
		98n	1	0	0	0	0	0	0	0
		99o	26	15,507	1	0	0	15,508	1,014	16,522
		99n	4	3	0	0	0	3	111	114
88-75-5	2-Nitrophenol	88	4	33,689	1	0	2	33,692	13,100	46,792
		95	5	38	50	0	0	88	0	88
		98o	5	45	35	0	0	80	0	80
		98n	1	129	0	0	0	129	0	129
		99o	6	52	48	0	0	100	0	100
		99n	No reports							
100-02-7	* 4-Nitrophenol	88	7	7,855	0	6,300	7	14,162	70	14,232
		95	6	945	0	0	0	945	0	945
		98o	5	855	0	0	0	855	0	855
		98n	3	35	0	0	0	35	500	535
		99o	6	867	0	0	0	867	0	867
		99n	4	201	1	0	21,924	22,126	4,272	26,398
79-46-9	*,** 2-Nitropropane	88	15	389,385	4,300	257,000	0	650,685	4,785	655,470
		95	5	31,265	3,000	0	0	34,265	0	34,265
		98o	3	23,479	558	0	0	24,037	0	24,037
		98n	6	359	0	0	0	359	192	551
		99o	2	20,844	285	0	0	21,129	0	21,129
		99n	4	98	1	0	0	99	1,146	1,245
924-16-3	N-Nitrosodi-n-butylamine	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	1	2	1	0	0	3	4	7

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
5-Nitro-o-anisidine	88	No reports								
	95	0	0	0	0	0	0	5	5	0
	98o	0	0	0	0	0	0	1	1	0
	98n	No reports								
	99o	0	0	0	0	0	0	1	1	0
	99n	No reports								
*,** Nitrobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,277,200	0	1,554,583	79,781	1,297,305	639,061	354,552	5,202,482	649
	98o	419,863	0	1,847,505	590,234	1,743,632	1,056,242	497,174	6,154,650	7,024
	98n	0	0	0	663,888	778,054	0	16,670	1,458,612	1
	99o	13,245,570	1	1,773,033	1,431,993	3,005,001	2,334,493	327,531	22,117,622	9,089
	99n	150,901	0	0	250,049	1,240,915	732	51,127	1,693,724	10
Nitroglycerin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	24,151	0	0	0	428,538	59,598	39,389	551,676	6
	98o	18,000	15,198	0	21,685	270,572	134,991	60,217	520,663	0
	98n	0	0	0	0	0	0	0	0	0
	99o	33,366	790	0	32,958	6,630,605	59,363	15,647	6,772,729	98
	99n	0	0	0	0	88,569	0	114	88,683	0
2-Nitrophenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	28,000	6	120,000	23,311	83	171,400	0
	98o	0	0	82,000	0	61,000	24,000	85	167,085	0
	98n	0	0	0	0	352,946	0	129	353,075	0
	99o	0	0	65,000	0	324,516	18,545	101	408,162	1
	99n	No reports								
* 4-Nitrophenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	10,469	3	65,000	574,800	950	651,222	0
	98o	0	0	0	0	139,944	633,083	860	773,887	0
	98n	0	0	0	591,228	31,000	1	180	622,409	1
	99o	0	0	10,300	0	200,296	526,451	850	737,897	1
	99n	0	0	0	0	84,842	380	26,389	111,611	0
*,** 2-Nitropropane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	520	140,000	81	63,028	0	34,023	237,652	0
	98o	0	0	9,835	23	10,598	31,114	24,037	75,607	1
	98n	0	0	0	519,228	203,826	11,854	551	735,459	1
	99o	0	0	90	0	5,411	65	21,099	26,665	0
	99n	0	0	0	0	888,259	0	1,246	889,505	0
N-Nitrosodi-n-butylamine	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	32,000	0	2	32,002	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
55-18-5	N-Nitrosodiethylamine	88	No reports							
		95	No reports							
		98o	No reports							
		98n	2	2	0	0	0	2	0	2
		99o	No reports							
		99n	3	30	1	0	7,640	7,671	4,123	11,794
62-75-9	** N-Nitrosodimethylamine	88	1	0	0	0	0	0	0	0
		95	No reports							
		98o	No reports							
		98n	1	129	0	0	0	129	0	129
		99o	1	5	0	0	0	5	0	5
		99n	No reports							
86-30-6	N-Nitrosodiphenylamine	88	2	0	27	34,000	0	34,027	0	34,027
		95	3	10	0	0	0	10	0	10
		98o	4	12	0	0	0	12	0	12
		98n	1	63	0	0	0	63	0	63
		99o	5	16	0	0	0	16	0	16
		99n	1	17	0	0	0	17	0	17
156-10-5	p-Nitrosodiphenylamine	88	2	15	0	2,000	0	2,015	180	2,195
		95	2	24	0	0	0	24	520	544
		98o	2	24	0	0	0	24	0	24
		98n	No reports							
		99o	2	24	0	0	0	24	0	24
		99n	No reports							
621-64-7	N-Nitrosodi-n-propylamine	88	No reports							
		95	No reports							
		98o	1	750	0	0	0	750	1,500	2,250
		98n	1	129	0	0	0	129	0	129
		99o	1	5	0	0	0	5	0	5
		99n	No reports							
759-73-9	N-Nitroso-N-ethylurea	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	7	1	0	0	8	161	169
684-93-5	N-Nitroso-N-methylurea	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	7	1	0	0	8	162	170

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
N-Nitrosodiethylamine	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	23,708	0	2	23,710	0
	99o	No reports								
	99n	0	0	0	0	54,242	0	11,791	66,033	0
** N-Nitrosodimethylamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	352,946	0	129	353,075	0
	99o	0	0	0	0	3,978	40	1	4,019	1
	99n	No reports								
N-Nitrosodiphenylamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	30,815	340,005	10	370,830	0
	98o	0	0	0	340,000	77,702	34,298	12	452,012	0
	98n	0	0	0	0	80,769	0	63	80,832	0
	99o	0	0	0	410,000	66,647	35,279	11	511,937	1
	99n	0	0	0	0	348,042	0	17	348,059	0
p-Nitrosodiphenylamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	8,600	15,000	0	65	544	24,209	0
	98o	0	0	9,300	16,500	0	0	24	25,824	0
	98n	No reports								
	99o	0	0	10,000	18,000	0	0	24	28,024	0
	99n	No reports								
N-Nitrosodi-n-propylamine	88	No reports								
	95	No reports								
	98o	0	0	25,000	1,500	25,000	0	600	52,100	0
	98n	0	0	0	0	352,946	0	129	353,075	0
	99o	0	0	0	0	3,605	36	1	3,642	1
	99n	No reports								
N-Nitroso-N-ethylurea	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	161,322	0	164	161,486	0
N-Nitroso-N-methylurea	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	162,480	0	165	162,645	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

** Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
4549-40-0	N-Nitrosomethyl-vinylamine	88	No reports							
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	2	4	0	0	0	4	153	157
59-89-2	N-Nitrosomorpholine	88	No reports							
		95	1	0	0	0	0	0	0	0
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	No reports							
100-75-4	N-Nitrosopiperidine	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	38	1	0	9,557	9,596	5,159	14,755
99-55-8	5-Nitro-o-toluidine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	5	0	0	0	5	30	35
		98o	2	0	0	0	0	0	0	0
		98n	1	0	0	0	0	0	0	0
		99o	2	0	0	0	0	0	0	0
		99n	3	27	0	0	7,644	7,671	4,139	11,810
27314-13-2 *	Norflurazon	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	5	0	0	0	5	54,000	54,005
		98o	4	15	76	0	229	320	14,850	15,170
		98n	No reports							
		99o	2	5	2	0	4	11	1,850	1,861
		99n	No reports							
19044-88-3 *	Oryzalin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	5	0	0	0	5	0	5
		98o	3	98	0	0	0	98	0	98
		98n	1	5	0	0	0	5	0	5
		99o	4	48	0	0	0	48	0	48
		99n	1	5	0	0	0	5	0	5
20816-12-0	Osmium tetroxide	88	No reports							
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	1	0	0	0	0	0	0	0

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998, and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
N-Nitrosomethyl-vinylamine	88	No reports								
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	94,353	0	157	94,510	0
N-Nitrosomorpholine	88	No reports								
	95	0	0	0	0	0	0	0	0	0
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
N-Nitrosopiperidine	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	73,025	0	14,753	87,778	0
5-Nitro-o-toluidine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	35	35	0
	98o	0	0	0	0	0	0	0	0	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	71,394	0	11,808	83,202	0
* Norflurazon	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	1,000	54,010	55,010	0
	98o	0	0	0	0	12,700	59,780	340	72,820	0
	98n	No reports								
	99o	0	0	0	0	0	46,850	15	46,865	0
	99n	No reports								
* Oryzalin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	40,000	2	40,002	0
	98o	0	0	0	0	3,500	42,000	93	45,593	0
	98n	0	0	0	0	19,472	0	5	19,477	0
	99o	0	0	0	0	46	67,000	48	67,094	0
	99n	0	0	0	0	19,472	0	0	19,472	0
Osmium tetroxide	88	No reports								
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	37,606	0	0	37,606	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
301-12-2 *	Oxydemeton methyl	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
19666-30-9 *	Oxydiazon	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	665	0	0	0	665	0	665
		98o	5	1,160	0	0	0	1,160	750	1,910
		98n	No reports							
		99o	6	770	0	0	0	770	2,207	2,977
		99n	No reports							
42874-03-3 *	Oxyfluorfen	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	87	3	0	0	90	0	90
		98o	2	10	0	0	0	10	0	10
		98n	No reports							
		99o	2	1,305	0	0	0	1,305	0	1,305
		99n	1	0	0	0	17,690	17,690	0	17,690
10028-15-6	Ozone	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	29	571,182	0	0	0	571,182	0	571,182
		98o	36	655,550	0	0	0	655,550	0	655,550
		98n	2	3	0	0	0	3	0	3
		99o	36	609,468	0	0	5	609,473	0	609,473
		99n	2	1	0	0	0	1	0	1
123-63-7	Paraldehyde	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	33	0	0	0	33	0	33
		98o	3	26	0	0	0	26	0	26
		98n	1	0	0	0	0	0	0	0
		99o	3	31	71	0	0	102	0	102
		99n	3	23	1	0	0	24	268	292
1910-42-5 *	Paraquat dichloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	1,000	0	0	0	1,000	0	1,000
		98o	3	500	0	0	0	500	0	500
		98n	No reports							
		99o	3	0	0	0	0	0	0	0
		99n	No reports							
56-38-2 *	Parathion	88	13	3,265	750	0	250	4,265	3,959	8,224
		95	2	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	1	0	0	0	0	0	85	85
		99o	1	0	0	0	0	0	0	0
		99n	2	0	0	0	0	0	28	28

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998, and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Oxydemeton methyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Oxydiazon	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	3,012	0	0	0	2,400	100	611	6,123	0
	98o	28,500	0	0	0	960	287	900	30,647	0
	98n	No reports								
	99o	31,000	0	0	0	1,000	4,092	4,641	40,733	0
	99n	No reports								
* Oxyfluorfen	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	130	15,093	90	15,313	0
	98o	0	0	0	0	2,800	2,900	1	5,701	0
	98n	No reports								
	99o	0	0	0	0	1,300	15,599	2	16,901	0
	99n	0	0	0	0	0	0	17,690	17,690	0
Ozone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	2,402,564	0	569,989	2,972,553	2
	98o	0	0	0	0	2,940,204	0	654,453	3,594,657	0
	98n	0	0	0	0	0	0	3	3	0
	99o	0	0	0	0	2,655,193	0	640,340	3,295,533	3
	99n	0	0	0	0	0	0	1	1	0
Paraldehyde	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	47,460	11	250,000	0	33	297,504	1
	98o	0	0	18,414	7	140,002	0	26	158,449	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	43,482	0	110,445	8	102	154,037	0
	99n	0	0	0	0	299,520	0	289	299,809	0
* Paraquat dichloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	68	0	0	0	0	170	206	444	0
	98o	0	0	0	0	0	6	112	118	0
	98n	No reports								
	99o	0	0	0	0	0	10	0	10	0
	99n	No reports								
* Parathion	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	0	0	0	0	32,638	0	85	32,723	0
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	69,806	0	28	69,834	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On-site Releases	Transfers Off-site to Disposal	
				Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
1114-71-2	* Pebulate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	507	122	0	0	629	811	1,440
		98o	2	520	98	0	0	618	1,501	2,119
		98n	No reports							
		99o	1	500	0	0	0	500	500	1,000
		99n	No reports							
40487-42-1	* Pendimethalin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	1,250	250	0	500	2,000	0	2,000
		98o	6	3,000	15	0	5	3,020	560	3,580
		98n	3	3	0	0	0	3	123	126
		99o	9	2,465	40	0	5	2,510	5,651	8,161
		99n	2	3	0	0	0	3	111	114
76-01-7	* Pentachloroethane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	1,534	22	0	0	1,556	0	1,556
		98o	7	1,550	0	0	0	1,550	0	1,550
		98n	3	60	0	0	0	60	0	60
		99o	7	785	1	0	0	786	2	788
		99n	3	23	1	0	0	24	242	266
87-86-5	*,** Pentachlorophenol	88	55	14,029	2,465	20,000	3,717	40,211	518,105	558,316
		95	37	6,256	2,896	0	250	9,402	23,942	33,344
		98o	35	4,343	1,057	0	250	5,650	23,118	28,768
		98n	9	287	250	250	240,000	240,787	1,940	242,727
		99o	33	1,279	1,276	0	250	2,805	1,918	4,723
		99n	14	27	1	5	98,587	98,620	463	99,083
57-33-0	Pentobarbital sodium	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	No reports							
		99n	No reports							
79-21-0	* Peracetic acid	88	8	5,453	55	0	0	5,508	0	5,508
		95	24	7,847	15	0	1,144	9,006	0	9,006
		98o	27	8,330	5	0	1,150	9,485	0	9,485
		98n	No reports							
		99o	28	13,557	755	0	1,095	15,407	0	15,407
		99n	No reports							
594-42-3	* Perchloromethyl-mercaptan	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	541	0	0	0	541	0	541
		98o	3	894	0	0	0	894	0	894
		98n	No reports							
		99o	3	899	0	0	0	899	0	899
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998, and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Pebutate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	600	4,600	270	5,470	0
	98o	0	0	0	0	89	2,809	1,523	4,421	0
	98n	No reports								
	99o	0	0	0	0	0	0	680	680	0
	99n	No reports								
* Pendimethalin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	300	0	0	0	190,000	6,774	1,498	198,572	56
	98o	2,000	0	0	0	160,000	104,946	2,532	269,478	0
	98n	0	0	0	0	86,483	0	126	86,609	0
	99o	6,000	0	0	0	150,000	64,385	4,555	224,940	0
	99n	0	0	0	0	32,171	0	115	32,286	0
* Pentachloroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	220,000	0	5,972,374	75,431	1,552	6,269,357	0
	98o	620,000	0	0	0	5,007,683	107,405	1,551	5,736,639	0
	98n	0	0	0	134,821	47,064	0	60	181,945	1
	99o	670,000	16,407	0	0	5,699,574	43,357	627	6,429,965	168
	99n	0	0	0	0	149,751	0	353	150,104	0
*,** Pentachlorophenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,888,603	334	9,151	14,606	6,780	87,462	25,551	2,032,487	9
	98o	76,838	227,808	1,680	4,416	4,790	127,928	25,948	469,408	5,815
	98n	0	0	1,002	0	105,151	5	242,089	348,247	0
	99o	148,940	4,773	39,000	2,907	7,766	154,388	16,096	373,870	1,762
	99n	0	0	2,837	21	321,684	674	97,586	422,802	2,000
Pentobarbital sodium	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	No reports								
	99n	No reports								
* Peracetic acid	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	13,833	0	0	0	12,884	12,396	8,889	48,002	3
	98o	0	0	0	0	47,536	17,732	9,971	75,239	1
	98n	No reports								
	99o	0	0	0	0	20,329	5,860	27,481	53,670	0
	99n	No reports								
* Perchloromethyl mercaptan	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	540	0	541	1,081	0
	98o	0	0	0	0	120,000	15	891	120,906	0
	98n	No reports								
	99o	0	0	0	0	112,000	8	898	112,906	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

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Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
52645-53-1 *	Permethrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	13	1,299	37	0	250	1,586	751	2,337
		98o	18	4,435	7	0	0	4,442	17,549	21,991
		98n	1	0	0	0	0	0	0	0
		99o	19	2,593	0	0	0	2,593	1,004	3,597
		99n	3	0	0	0	31,000	31,000	9	31,009
85-01-8	Phenanthrene	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	36	72,633	19	0	4,008	76,660	74,560	151,220
		98o	64	238,895	214	0	77,577	316,686	80,258	396,944
		98n	10	26,006	0	0	0	26,006	606	26,612
		99o	73	253,888	172	0	15,800	269,860	107,667	377,527
		99n	11	3,577	0	0	59,013	62,590	10,682	73,272
108-95-2 *	Phenol	88	635	10,712,736	259,230	4,661,319	1,882,485	17,515,770	2,536,030	20,051,800
		95	759	9,369,262	70,566	3,823,235	174,581	13,437,644	1,327,795	14,765,439
		98o	779	8,978,452	60,884	1,648,446	436,649	11,124,431	1,228,494	12,352,925
		98n	32	1,627	1,277	432,901	67,000	502,805	6,204	509,009
		99o	749	7,413,944	46,003	1,575,395	1,419,125	10,454,467	1,269,972	11,724,439
		99n	29	12,716	1	267,782	19,587	300,086	7,891	307,977
26002-80-2 *	Phenothrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	3	0	0	0	0	0	0	0
		99n	No reports							
95-54-5	1,2-Phenylenediamine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	8	977	41,100	0	2,176	44,253	31	44,284
		98o	7	528	51	0	0	579	1,631	2,210
		98n	1	37	0	0	0	37	10	47
		99o	7	518	30	0	4,033	4,581	7	4,588
		99n	No reports							
108-45-2	1,3-Phenylenediamine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	20	6,621	43,343	0	63,153	113,117	80	113,197
		98o	23	8,938	727	0	18,668	28,333	20,559	48,892
		98n	2	37	0	0	0	37	10	47
		99o	19	2,358	237	0	31,534	34,129	37	34,166
		99n	1	0	0	0	0	0	0	0
106-50-3	p-Phenylenediamine	88	13	113,890	826	4,716	0	119,432	64,452	183,884
		95	10	4,440	856	0	653	5,949	0	5,949
		98o	12	1,517	114	0	0	1,631	1,816	3,447
		98n	No reports							
		99o	11	1,781	184	0	1,100	3,065	2,978	6,043
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998, and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Permethrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	5	651	665	543	1,864	0
	98o	0	0	0	0	277	22,529	5,379	28,185	0
	98n	0	0	0	0	10,538	0	0	10,538	0
	99o	0	0	0	0	215	17,999	4,383	22,597	1
	99n	0	0	0	0	26,033	0	31,235	57,268	0
Phenanthrene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	162,334	1,190	35,001	197,478	1,123,105	2,410	153,880	1,675,398	42,530
	98o	326,966	98,267	53,336	165,155	526,904	170,536	341,494	1,682,658	7,313
	98n	0	0	0	32,000	234,397	0	27,212	293,609	2
	99o	1,082,986	83,544	340,620	216,420	43,339	112,080	391,635	2,270,624	12
	99n	0	0	0	33,800	347,738	0	73,753	455,291	1
* Phenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	41,534,425	556,968	28,742,254	3,686,272	34,989,078	6,364,238	14,554,069	130,427,304	72,199
	98o	42,421,572	133,242	32,544,506	4,372,598	26,229,489	5,249,876	11,948,022	122,899,305	49,213
	98n	0	0	0	4,914,898	4,715,602	1,557	571,501	10,203,558	9
	99o	41,857,920	593,038	29,778,402	3,610,043	28,108,118	6,294,228	10,454,395	120,696,144	7,064
	99n	6,895	0	627	405,878	2,240,850	8,768	306,349	2,969,367	10
* Phenothrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
1,2-Phenylenediamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	504,896	7,316	44,052	556,264	320
	98o	0	0	0	0	176,437	50,690	2,208	229,335	0
	98n	0	0	0	0	0	0	37	37	0
	99o	0	0	0	0	178,620	47,156	4,588	230,364	0
	99n	No reports								
1,3-Phenylenediamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	493	676,332	134,187	112,936	923,948	1
	98o	650	114,558	20	2,300	674,477	1,734,329	46,449	2,572,783	1,520
	98n	0	0	0	0	12,604	0	37	12,641	0
	99o	760	0	0	2,901	256,562	1,730,750	35,231	2,026,204	2
	99n	0	0	0	0	19,738	0	0	19,738	0
p-Phenylenediamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	364,868	20,082	5,757	390,707	1
	98o	0	0	0	111	337,520	66,661	3,045	407,337	0
	98n	No reports								
	99o	0	0	0	8	413,800	104,497	4,093	522,398	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
90-43-7	* 2-Phenylphenol	88	15	10,630	480	0	0	11,110	250	11,360
		95	17	27,063	10	0	5	27,078	5,656	32,734
		98o	14	23	20	0	250	293	1,363	1,656
		98n	1	0	0	0	0	0	0	0
		99o	19	14	10	0	253	277	1,755	2,032
		99n	1	0	0	0	0	0	0	0
57-41-0	** Phenytoin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	19,300	19,300
		98o	1	1	0	0	0	1	7,510	7,511
		98n	1	3	0	0	0	3	143	146
		99o	1	1	0	0	0	1	9,400	9,401
		99n	No reports							
75-44-5	Phosgene	88	37	21,603	500	250	0	22,353	480	22,833
		95	29	15,894	0	5	0	15,899	0	15,899
		98o	34	20,247	0	0	3	20,250	0	20,250
		98n	No reports							
		99o	31	16,604	0	0	0	16,604	0	16,604
		99n	2	3	0	0	0	3	93	96
7803-51-2	* Phosphine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	1,491	0	0	0	1,491	0	1,491
		98o	5	38,368	0	0	0	38,368	0	38,368
		98n	No reports							
		99o	5	54,385	0	0	0	54,385	0	54,385
		99n	2	3	0	0	0	3	92	95
7723-14-0	* Phosphorus (yellow or white)	88	73	20,608	11,322	0	3,893,674	3,925,604	195,013	4,120,617
		95	53	28,621	3,661	0	1,871,801	1,904,083	23,650	1,927,733
		98o	52	23,590	3,761	0	2,273,118	2,300,469	7,637	2,308,106
		98n	3	14	0	0	0	14	568	582
		99o	53	9,748	4,990	0	2,715,672	2,730,410	6,739	2,737,149
		99n	3	75,125	0	0	0	75,125	108	75,233
85-44-9	Phthalic anhydride	88	180	549,909	1,040	0	1,265	552,214	3,976,682	4,528,896
		95	184	604,993	711	0	674	606,378	76,916	683,294
		98o	162	303,603	193	0	0	303,796	3,827,768	4,131,564
		98n	6	21	0	31,039	0	31,060	386	31,446
		99o	152	276,527	67	0	300	276,894	2,954,374	3,231,268
		99n	7	538	1	0	7,640	8,179	6,099	14,278
1918-02-1	* Picloram	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	220	1	0	0	221	0	221
		98o	2	460	380,006	0	0	380,466	0	380,466
		98n	No reports							
		99o	2	2,800	10	0	0	2,810	0	2,810
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998, and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* 2-Phenylphenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	530	0	1,027,544	2,104	32,551	1,062,729	1
	98o	197	0	300	0	120,000	332	456	121,285	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	1	0	125,000	2,970	313	128,284	1
	99n	0	0	0	0	0	0	0	0	0
** Phenytoin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	19,000	19,000	0
	98o	0	0	0	0	140	15,000	7,500	22,640	0
	98n	0	0	0	0	20,629	0	146	20,775	0
	99o	0	0	0	0	152	17,500	9,400	27,052	0
	99n	No reports								
Phosgene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	430,034	0	15,138,316	2,414	15,867	15,586,631	7
	98o	3,173,304	0	0	330	7,417,424	735	20,288	10,612,081	43
	98n	No reports								
	99o	10,150,418	0	0	0	11,339,630	543	16,440	21,507,031	34
	99n	0	0	0	0	112,537	0	95	112,632	0
* Phosphine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	2,491	2,491	10
	98o	0	0	0	0	328,000	0	38,368	366,368	135
	98n	No reports								
	99o	0	0	0	0	385,101	0	54,385	439,486	0
	99n	0	0	0	0	54,236	0	95	54,331	0
* Phosphorus (yellow or white)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,091	26,089	0	0	5,052	147,342	1,929,173	2,108,747	1,080
	98o	1	236,289	0	0	900,878	1,235	2,306,947	3,445,350	4,401
	98n	0	0	0	0	80,274	0	576	80,850	0
	99o	1	202,852	0	0	570,350	1,771	2,737,051	3,512,025	4
	99n	75,121	0	0	0	19,836	0	112	95,069	1
Phthalic anhydride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	421,574	1,317	2,420,922	4,951,573	18,689,501	446,526	670,336	27,601,749	26,167
	98o	169,533	49,603	3,110,037	2,975,259	16,603,832	560,162	4,128,871	27,597,297	15,049
	98n	0	0	0	13,502	177,000	0	31,446	221,948	1
	99o	79,831	29,939	2,993,912	1,871,113	15,571,615	153,837	3,201,920	23,902,167	72,442
	99n	0	0	0	33,034	322,550	492	12,199	368,275	5
* Picloram	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	23,208	0	221	23,429	0
	98o	0	0	0	0	59,000	0	380,006	439,006	0
	98n	No reports								
	99o	0	0	0	0	51,940	0	2,810	54,750	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

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Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
88-89-1	Picric acid	88	5	252	251	1,362,180	250	1,362,933	0	1,362,933
		95	9	221	0	49,256	0	49,477	0	49,477
		98o	8	0	1	63,950	0	63,951	0	63,951
		98n	No reports							
		99o	8	0	1	129,398	0	129,399	0	129,399
		99n	No reports							
51-03-6 *	Piperonyl butoxide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	12	775	0	0	0	775	750	1,525
		98o	12	501	0	0	0	501	0	501
		98n	No reports							
		99o	12	1,005	0	0	0	1,005	0	1,005
		99n	1	0	0	0	0	0	0	0
29232-93-7 *	Pirimiphos methyl	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	1	1	0	0	0	1	0	1
		99n	No reports							
—	** Polybrominated biphenyls	88	1	250	0	0	0	250	0	250
		95	2	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	No reports							
—	Polychlorinated alkanes	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	72	23,250	6,206	0	0	29,456	197,607	227,063
		98o	69	4,085	4,131	0	0	8,216	109,932	118,148
		98n	2	0	0	0	0	0	0	0
		99o	66	5,788	4,805	0	0	10,593	110,943	121,536
		99n	3	0	0	0	16,065	16,065	8,713	24,778
1336-36-3 *,**	Polychlorinated biphenyls (PCBs)	88	120	6	10	0	752	768	410,996	411,764
		95	9	0	0	0	0	0	34,432	34,432
		98o	7	0	0	0	134,160	134,160	135	134,295
		98n	14	446	251	5	3,607,976	3,608,678	4,192	3,612,870
		99o	8	0	0	0	0	0	108	108
		99n	16	531	2	0	10,630,427	10,630,960	1,533	10,632,493
—	** Polycyclic aromatic compounds	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	158	433,980	4,995	0	39,551	478,526	1,226,135	1,704,661
		98o	186	1,478,696	1,987	0	169,011	1,649,694	1,750,357	3,400,051
		98n	78	1,377	21	0	115,530	116,928	3,206	120,134
		99o	192	1,338,751	1,720	0	16,958	1,357,429	2,071,022	3,428,451
		99n	84	41,139	43	0	186,055	227,237	6,931	234,168

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

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**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Picric acid	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	53,393	2	1,261,618	0	49,477	1,364,490	0
	98o	0	0	129,412	12,941	1,627,444	0	63,951	1,833,748	0
	98n	No reports								
	99o	0	0	582	0	1,582,234	0	129,399	1,712,215	1
	99n	No reports								
* Piperonyl butoxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	5	0	16,290	1,099	17,394	1
	98o	0	0	0	0	0	3,412	426	3,838	0
	98n	No reports								
	99o	0	0	0	0	0	3,432	595	4,027	0
	99n	0	0	0	0	21,382	0	0	21,382	0
* Pirimiphos methyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	0	0	0	0	0	0	1	1	0
	99n	No reports								
** Polybrominated biphenyls	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	2,720	0	0	0	0	0	2,720	0
	98o	0	1,000	0	0	0	0	0	1,000	0
	98n	No reports								
	99o	0	448	0	0	0	0	0	448	0
	99n	No reports								
Polychlorinated alkanes	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	229,803	208,674	0	137,632	335,520	489,977	242,014	1,643,620	7
	98o	110,100	469,915	32,400	83,293	36,201	232,498	145,365	1,109,772	633
	98n	0	0	0	0	11,325	846	0	12,171	0
	99o	127,200	425,913	28,000	94,229	340	227,335	137,900	1,040,917	4
	99n	0	0	0	0	29,848	0	24,823	54,671	0
Polychlorinated biphenyls (PCBs)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	64,494	8,242	72,736	1
	98o	0	0	0	0	0	261,979	0	261,979	1
	98n	0	140,018	0	0	8,446,718	428,113	3,626,637	12,641,486	2
	99o	0	0	0	0	0	644,531	0	644,531	111
	99n	0	92,003	0	0	11,690,585	388,219	7,095,524	19,266,331	1
** Polycyclic aromatic compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,473,048	116,093	10,499,200	59,223	2,502,982	13,825	1,734,470	16,398,841	22,303
	98o	1,900,617	246,834	3,835,404	259,788	4,695,159	37,484	3,292,953	14,268,239	43,947
	98n	312	216	0	0	48,107,002	1,345	120,494	48,229,369	110
	99o	3,440,747	218,251	4,126,035	80,493	3,953,604	63,552	3,564,705	15,447,387	131,636
	99n	59	2,099	0	10	68,390,656	2,522	233,319	68,628,665	337

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
7758-01-2	** Potassium bromate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	5	0	0	0	5	0	5
		98o	4	10	0	0	0	10	0	10
		98n	No reports							
		99o	2	5	0	0	0	5	0	5
		99n	No reports							
128-03-0	* Potassium dimethyldithiocarbamate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	11	224	10,170	0	0	10,394	0	10,394
		98o	19	533	43,088	0	5	43,626	5	43,631
		98n	No reports							
		99o	18	10,523	18,417	0	5	28,945	676	29,621
		99n	No reports							
137-41-7	* Potassium N-methyldithiocarbamate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	35	0	0	0	35	0	35
		98o	5	0	0	0	0	0	0	0
		98n	No reports							
		99o	5	10	5,680	0	0	5,690	0	5,690
		99n	No reports							
41198-08-7	* Profenofos	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	10	0	0	0	10	0	10
		98n	No reports							
		99o	1	10	0	0	0	10	0	10
		99n	No reports							
7287-19-6	* Prometryn	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	6	1,481	159	0	0	1,640	890	2,530
		98o	5	725	8	0	0	733	1,047	1,780
		98n	No reports							
		99o	5	502	4	0	0	506	0	506
		99n	No reports							
23950-58-5	* Pronamide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	255	0	0	0	255	0	255
		98o	2	255	0	0	0	255	0	255
		98n	2	110	0	0	0	110	0	110
		99o	2	330	0	0	0	330	0	330
		99n	1	2	1	0	0	3	16	19
1918-16-7	* Propachlor	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	331	0	0	0	331	777	1,108
		98o	4	62	0	0	0	62	600	662
		98n	No reports							
		99o	2	60	0	0	0	60	0	60
		99n	2	21	0	0	14,208	14,229	10	14,239

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** Potassium bromate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	51,447	1	0	0	13	51,461	0
	98n	No reports								
	99o	0	0	0	0	0	0	10	10	0
	99n	No reports								
* Potassium dimethyldithio-carbamate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	19,317	161,362	10,394	191,073	0
	98o	0	0	0	0	23,596	120,325	54,888	198,809	1
	98n	No reports								
	99o	0	0	0	0	40,169	72,363	45,669	158,201	1
	99n	No reports								
* Potassium N-methyldithio-carbamate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	35	35	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	4,647	0	5,690	10,337	0
	99n	No reports								
* Profenofos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	109	0	0	109	0
	98o	0	0	0	0	0	0	7,270	7,270	0
	98n	No reports								
	99o	0	0	0	0	0	0	6,420	6,420	0
	99n	No reports								
* Prometryn	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	1	1,314	7,603	4,028	12,946	0
	98o	0	0	0	0	30,035	38,455	789	69,279	0
	98n	No reports								
	99o	0	0	0	0	51,018	6,238	4,342	61,598	0
	99n	No reports								
* Pronamide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	3,700	0	0	0	0	1,200	260	5,160	0
	98o	5,500	0	0	0	0	2,095	290	7,885	0
	98n	0	0	0	234,265	0	0	110	234,375	1
	99o	14,000	0	0	0	0	2,393	1,613	18,006	0
	99n	0	0	0	0	33,000	0	15	33,015	0
* Propachlor	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	7,270	1,237	8,507	14,000
	98o	0	0	0	0	0	91,800	662	92,462	0
	98n	No reports								
	99o	0	0	0	0	0	85,700	660	86,360	0
	99n	0	0	0	0	77,027	0	14,224	91,251	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
1120-71-4	** Propane sultone	88	2	0	0	0	0	0	0	0
		95	1	0	0	0	0	0	0	0
		98o	No reports							
		98n	No reports							
		99o	No reports							
709-98-8	* Propanil	99n	2	5	0	5	0	10	157	167
		88	NR	NR	NR	NR	NR	NR	NR	NR
		95	4	2,357	250	0	0	2,607	3,723	6,330
		98o	5	2,505	750	0	0	3,255	11,250	14,505
		98n	1	2	0	0	0	2	270	272
2312-35-8	* Propargite	99o	5	2,010	750	0	0	2,760	26,250	29,010
		99n	No reports							
		88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	426	0	0	0	426	0	426
		98o	3	525	0	0	0	525	3,546	4,071
107-19-7	* Propargyl alcohol	98n	No reports							
		99o	3	739	0	0	0	739	9,446	10,185
		99n	No reports							
		88	NR	NR	NR	NR	NR	NR	NR	NR
		95	11	10,245	0	290,680	0	300,925	936	301,861
31218-83-4	* Propetamphos	98o	14	15,675	0	418,223	7,620	441,518	253	441,771
		98n	2	5	0	0	0	5	0	5
		99o	12	9,960	0	545,399	0	555,359	10,085	565,444
		99n	3	14	0	0	0	14	152	166
		88	NR	NR	NR	NR	NR	NR	NR	NR
60207-90-1	* Propiconazole	95	1	500	0	0	0	500	750	1,250
		98o	1	10	0	0	0	10	250	260
		98n	No reports							
		99o	1	10	0	0	0	10	250	260
		99n	No reports							
123-38-6	* Propionaldehyde	88	15	1,267,839	1,156	930	0	1,269,925	0	1,269,925
		95	24	263,349	27,012	101,432	0	391,793	0	391,793
		98o	26	311,153	6,017	92,183	78	409,431	14	409,445
		98n	3	192	0	0	0	192	0	192
		99o	24	426,111	2,604	97,144	0	525,859	331	526,190
		99n	3	11	0	15,576	0	15,587	0	15,587

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

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**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** Propane sultone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	16	0	0	16	0
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	129,321	0	165	129,486	0
* Propanil	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	402	4,468	4,870	0
	98o	200,000	0	0	0	0	86,745	12,552	299,297	50
	98n	0	0	0	0	202,192	0	272	202,464	0
	99o	0	0	0	0	0	270,452	3,357	273,809	50
	99n	No reports								
* Propargite	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	544	0	4,365	426	5,335	0
	98o	0	0	0	2,216	0	76,189	3,896	82,301	0
	98n	No reports								
	99o	0	0	0	4,164	255	13,305	564	18,288	0
	99n	No reports								
* Propargyl alcohol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	198,867	344,704	56,027	78,003	301,422	979,023	0
	98o	0	0	60,400	520,327	109,142	41,800	444,545	1,176,214	1
	98n	0	0	0	909	13,178	1,000	2	15,089	0
	99o	0	0	13,091	4	94,786	62,376	591,893	762,150	5
	99n	0	0	0	0	137,838	0	159	137,997	0
* Propetamphos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	1,067	1,067	1
	98o	0	0	0	0	0	0	482	482	0
	98n	No reports								
	99o	0	0	0	0	0	0	490	490	0
	99n	No reports								
* Propiconazole	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	1,026	0	1,026	0
	98o	0	0	0	0	25,000	0	2,943	27,943	0
	98n	No reports								
	99o	0	0	0	0	22,000	0	2,001	24,001	0
	99n	No reports								
* Propionaldehyde	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	898,697	5,565	2,348,820	79,790	387,308	3,720,180	24
	98o	0	0	2,021,614	4,648	5,082,153	46,283	411,365	7,566,063	402
	98n	0	0	0	442,609	3	15	192	442,819	1
	99o	440,000	0	2,311,283	6,236	3,030,972	34,933	518,997	6,342,421	1
	99n	0	0	0	270	17	0	15,578	15,865	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

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**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
114-26-1 *	Propoxur	88	5	250	0	0	0	250	250	500
		95	5	5	0	0	0	5	0	5
		98o	2	0	0	0	0	0	0	0
		98n	1	0	0	0	0	0	10	10
		99o	1	0	0	0	0	0	0	0
		99n	1	11	0	0	0	11	10	21
115-07-1	Propylene	88	334	32,200,231	10,003	0	0	32,210,234	3,320	32,213,554
		95	353	27,576,252	4,047	0	169	27,580,468	298	27,580,766
		98o	368	16,332,670	3,104	2,870	389	16,339,033	897	16,339,930
		98n	41	79,765	0	0	0	79,765	0	79,765
		99o	385	13,496,827	1,023	136,393	396	13,634,639	118	13,634,757
		99n	47	63,996	0	0	0	63,996	0	63,996
75-55-8 **	Propyleneimine	88	1	500	0	0	0	500	0	500
		95	7	600	0	0	0	600	0	600
		98o	4	385	5	0	0	390	5	395
		98n	No reports							
		99o	4	104	0	0	0	104	0	104
		99n	2	4	0	0	0	4	153	157
75-56-9 *,**	Propylene oxide	88	128	3,680,215	112,503	1,113,780	11,630	4,918,128	16,626	4,934,754
		95	137	839,153	29,934	22,577	4,403	896,067	10,633	906,700
		98o	115	740,027	1,124	1,923	691	743,765	5,687	749,452
		98n	7	32	0	13,380	0	13,412	0	13,412
		99o	119	704,873	10,847	4,580	715	721,015	5,266	726,281
		99n	8	4	0	10,491	28,649	39,144	0	39,144
110-86-1 *	Pyridine	88	31	251,799	2,158	491,775	1,125	746,857	40,699	787,556
		95	42	100,190	830	532,497	4	633,521	433	633,954
		98o	50	70,262	1,056	593,199	0	664,517	13,854	678,371
		98n	16	697	0	5	0	702	2,292	2,994
		99o	52	68,647	1,074	953,995	0	1,023,716	378	1,024,094
		99n	14	899	1	0	0	900	52,862	53,762
91-22-5	Quinoline	88	34	49,350	502	0	896	50,748	6,242	56,990
		95	23	11,412	20	13,000	405	24,837	3,744	28,581
		98o	21	15,415	32	29,350	265	45,062	2,553	47,615
		98n	1	1	0	0	0	1	73	74
		99o	19	11,813	26	25,205	7	37,051	21,715	58,766
		99n	No reports							
106-51-4 *	Quinone	88	5	11,300	140	0	0	11,440	0	11,440
		95	4	7,101	1,500	0	0	8,601	0	8,601
		98o	6	482	1,600	0	0	2,082	0	2,082
		98n	1	0	0	0	0	0	0	0
		99o	6	415	1,400	0	0	1,815	0	1,815
		99n	3	24	1	0	0	25	161	186

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

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**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Propoxur	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	1,081	4	1,085	0
	98o	0	0	0	0	0	435	0	435	0
	98n	0	0	0	0	0	0	25	25	0
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	56,411	0	11	56,422	0
Propylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	6,713,304	0	463,253,246	3,132,285	254,254,014	80,239	26,886,689	754,319,777	1,008,723
	98o	74,791,416	23,152	456,059,665	2,218	299,247,194	2,896,808	14,962,907	847,983,360	1,239,982
	98n	0	0	0	0	14,440	0	79,097	93,537	13
	99o	105,899,757	28	395,331,079	10,337,809	387,944,876	1,579,785	13,370,607	914,463,941	267,586
	99n	0	0	0	0	33,620	0	63,403	97,023	6
** Propyleneimine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1,433	0	600	2,033	3
	98o	0	0	0	0	2,788	6	680	3,474	0
	98n	No reports		0	0	4,319	0	104	4,423	0
	99o	0	0	0	0	106,854	0	157	107,011	0
	99n	0	0	0	0					
*,** Propylene oxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	3,091	0	17,981,778	282,917	14,410,159	192,373	1,138,346	34,008,664	20,210
	98o	1,081,157	0	13,924,312	79,248	14,397,389	475,463	754,076	30,711,645	1,417
	98n	0	0	0	18,634	40,509	0	13,412	72,555	0
	99o	508,380	619	12,895,870	13,529	12,243,188	192,824	730,161	26,584,571	1,260
	99n	0	0	0	5,232	58,302	7,414	39,184	110,132	0
* Pyridine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	4,074,830	14,008	1,713,719	186,855	348,378	483,295	631,050	7,452,135	1,077
	98o	616,015	0	1,756,718	470,128	765,210	720,123	689,534	5,017,728	1,112
	98n	0	0	16,073	620,143	1,333,326	28,086	2,577	2,000,205	1
	99o	637,004	8,071	984,135	450,440	681,114	451,088	1,021,864	4,233,716	1,001
	99n	278,231	44	5,645	189,439	1,915,397	598,710	1,020	2,988,486	10
Quinoline	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,750	2,243	302,003	22	222,705	16,120	27,181	572,024	253
	98o	27,147	1,713	122,038	11,582	109,680	961	47,741	320,862	300
	98n	0	0	0	0	10,461	0	74	10,535	0
	99o	12,831	1,137	87,056	11,353	135,351	4,200	58,429	310,357	0
	99n	No reports								
* Quinone	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	179,870	1,328	130,500	30,173	8,601	350,472	0
	98o	0	0	1,400	17,747	567,300	10,917	2,101	599,465	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	340	162,544	116,001	135,984	1,805	416,674	0
	99n	0	0	0	0	176,005	0	182	176,187	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
82-68-8 *	Quintozene	88	6	1,064	0	0	0	1,064	12,625	13,689
		95	10	1,424	0	0	800	2,224	192	2,416
		98o	11	1,788	0	0	0	1,788	2	1,790
		98n	2	10	0	0	0	10	0	10
		99o	14	408	0	0	0	408	5,007	5,415
		99n	3	14	1	0	0	15	15	30
76578-14-8 *	Quizalofop-ethyl	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	6	0	0	0	6	0	6
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
10453-86-8 *	Resmethrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	3	22	0	0	0	22	0	22
		99n	No reports							
81-07-2 **	Saccharin (manufacturing)	88	4	750	0	0	0	750	750	1,500
		95	1	99	0	0	0	99	1,500	1,599
		98o	2	160	0	0	0	160	940	1,100
		98n	No reports							
		99o	2	63	0	0	0	63	940	1,003
		99n	1	0	0	0	0	0	0	0
94-59-7 *,**	Safrole	88	2	500	0	0	0	500	0	500
		95	1	255	0	0	0	255	0	255
		98o	2	10	0	0	0	10	0	10
		98n	1	0	0	0	0	0	0	0
		99o	2	260	0	0	0	260	0	260
		99n	2	21	0	0	6,005	6,026	3,239	9,265
7782-49-2 *	Selenium	88	24	16,282	1,168	0	127,508	144,958	4,367	149,325
		95	15	1,450	92	0	23	1,565	3,501	5,066
		98o	15	34,028	58	0	2,010	36,096	15,800	51,896
		98n	11	807	0	17,937	254,259	273,003	185,901	458,904
		99o	16	69,012	285	0	3,113	72,410	11,509	83,919
		99n	9	790	0	0	264,804	265,594	531	266,125
—	Selenium compounds	88	18	14,506	250	3,400	45,750	63,906	63,226	127,132
		95	40	61,960	2,184	3,640	264,759	332,543	124,185	456,728
		98o	52	74,716	3,373	38,030	360,694	476,813	75,214	552,027
		98n	80	527,771	32,727	8	4,809,151	5,369,657	371,330	5,740,987
		99o	50	82,408	4,106	33,509	305,342	425,365	94,026	519,391
		99n	73	508,214	40,960	0	5,647,927	6,197,101	558,772	6,755,873

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1A. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Quintozene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	863	0	0	0	0	759,587	2,251	762,701	110
	98o	515	0	0	342,800	0	13,168	1,790	358,273	0
	98n	0	0	0	0	44,515	0	3	44,518	0
	99o	2,371	0	0	214,728	0	8,126	451	225,676	30
	99n	0	0	0	0	126,058	0	21	126,079	0
* Quizalofop-ethyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	5	5	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Resmethrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	46	0	46	0
	99n	No reports								
** Saccharin (manufacturing)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	9,700	10	1,600	11,310	74
	98o	0	0	0	0	7,300	7	1,100	8,407	0
	98n	No reports								
	99o	0	0	0	0	6,800	7	1,000	7,807	0
	99n	0	0	0	0	117,930	0	0	117,930	0
*** Safrole	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1	5	0	6	0
	98o	0	0	0	0	0	10	30	40	0
	98n	0	0	0	0	0	0	0	0	0
	99o	0	0	0	0	0	10	110	120	0
	99n	0	0	0	0	61,981	0	9,263	71,244	0
* Selenium	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,604	4,604	0	0	23	2,271	1,524	10,026	1
	98o	0	0	86,174	3,902	156	920	45,019	136,171	0
	98n	0	0	0	0	0	185,504	273,341	458,845	0
	99o	4	800	0	0	1,166	50	81,686	83,706	47
	99n	0	0	0	0	0	0	265,869	265,869	0
Selenium compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	590,805	158,278	0	10	2	49,853	356,404	1,155,352	49,259
	98o	595,899	68,632	0	0	2,040	9,743	511,927	1,188,241	76,445
	98n	53,228	9	0	0	4	23	5,750,788	5,804,052	12
	99o	574,215	22,862	0	0	2,410	10,343	408,122	1,017,952	109,657
	99n	56,980	4	0	0	0	20	6,176,689	6,233,693	670,007

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
74051-80-2 *	Sethoxydim	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	2	10	0	0	0	10	0	10
		98n	1	0	0	0	0	0	0	0
		99o	2	10	0	0	0	10	0	10
		99n	No reports							
7440-22-4 *	Silver	88	72	47,988	1,654	0	39,510	89,152	8,482	97,634
		95	76	9,552	166	0	255	9,973	17,676	27,649
		98o	83	11,418	171	2	2,026	13,617	69,049	82,666
		98n	14	60	0	15,380	400,306	415,746	35,826	451,572
		99o	82	11,063	96	0	2,660	13,819	80,794	94,613
		99n	12	894	0	17,000	220,096	237,990	257,060	495,050
—	Silver compounds	88	46	15,406	8,684	250	11,550	35,890	15,803	51,693
		95	59	15,573	6,284	380	35,325	57,562	7,575	65,137
		98o	64	6,636	5,704	109	76,755	89,204	194,916	284,120
		98n	21	847	676	140,000	4,091,351	4,232,874	163,250	4,396,124
		99o	68	8,705	7,218	222	64,399	80,544	32,480	113,024
		99n	16	1,309	322	160,000	3,519,852	3,681,483	40,061	3,721,544
122-34-9 *	Simazine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	7	4,990	232	0	5	5,227	26,231	31,458
		98o	7	3,321	332	0	0	3,653	4,497	8,150
		98n	No reports							
		99o	6	3,928	385	0	0	4,313	2,385	6,698
		99n	No reports							
26628-22-8 *	Sodium azide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	14	35,575	200	0	255	36,030	133,837	169,867
		98o	11	15,392	20	0	250	15,662	10,891	26,553
		98n	3	14	0	0	190,646	190,660	180	190,840
		99o	9	5,946	15	0	0	5,961	5,652	11,613
		99n	3	11	0	0	33,542	33,553	318	33,871
1982-69-0 *	Sodium dicamba	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	14,350	0	750	0	15,100	0	15,100
		98o	2	8,560	0	750	0	9,310	0	9,310
		98n	No reports							
		99o	2	5,150	0	250	0	5,400	0	5,400
		99n	No reports							
128-04-1 *	Sodium dimethyldithio-carbamate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	63	2,746	20	0	0	2,766	152,357	155,123
		98o	83	22,024	4,868	0	13,367	40,259	306,193	346,452
		98n	10	7	0	0	482,268	482,275	12,564	494,839
		99o	74	13,211	4	0	51,994	65,209	276,157	341,366
		99n	8	487	0	0	433,202	433,689	33,498	467,187

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Sethoxydim	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	293	20	313	0
	98n	0	0	0	0	17,391	0	0	17,391	0
	99o	0	0	0	0	0	0	20	20	0
	99n	No reports								
* Silver	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	563,590	1,266,487	0	1	87,462	531	20,608	1,938,679	619
	98o	622,401	1,197,977	0	32	4,917	44,958	235,364	2,105,649	4
	98n	400	0	0	0	0	17	415,721	416,138	1
	99o	380,453	1,794,552	90,601	11	87	40,121	25,342	2,331,167	12
	99n	0	124,430	0	0	0	143,364	237,610	505,404	10
Silver compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	327,832	1,064,906	0	0	3,966,504	23,221	56,206	5,438,669	272
	98o	236,220	1,053,421	0	0	52,854	2,248	444,517	1,789,260	5,418
	98n	2,532	251	0	0	0	2,396	4,395,708	4,400,887	6
	99o	3,855,024	1,201,930	0	0	2,090	1,470	287,351	5,347,865	9,972
	99n	612	331	0	0	0	651	3,187,191	3,188,785	540,002
* Simazine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	150,000	24,000	4,970	178,970	0
	98o	50	0	0	0	68,000	1,500	6,294	75,844	0
	98n	No reports								
	99o	50	0	0	0	77,000	8,251	14,154	99,455	0
	99n	No reports								
* Sodium azide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	190,310	556,000	0	0	93,341	3,906,934	166,060	4,912,645	112
	98o	34,600	439,942	0	0	11,732	609,400	26,186	1,121,860	5
	98n	0	0	0	0	36,074	0	191,601	227,675	1
	99o	15,800	148,200	0	0	12,180	297,891	11,616	485,687	3
	99n	0	0	0	0	160,650	16	33,887	194,553	0
* Sodium dicamba	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	800	15,200	16,000	0
	98o	0	0	0	0	414,800	46,680	9,546	471,026	0
	98n	No reports								
	99o	0	0	0	0	248,383	0	5,400	253,783	0
	99n	No reports								
* Sodium dimethyldithio-carbamate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	250	199,200	0	0	462,188	511,438	28,169	1,201,245	5,006
	98o	250	183,221	192	0	741,898	663,564	280,326	1,869,451	3
	98n	0	1	0	3	0	430	497,268	497,702	2
	99o	250	196,401	0	0	780,422	576,882	153,080	1,707,035	5
	99n	0	0	0	0	42,326	0	467,037	509,363	1

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).
No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
62-74-8 *	Sodium fluoroacetate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	2	4	0	0	0	4	153	157
7632-00-0 *	Sodium nitrite	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	356	291,951	1,384,082	1,004,363	81,948	2,762,344	291,378	3,053,722
		98o	412	137,796	1,009,077	841,400	538,533	2,526,806	474,212	3,001,018
		98n	24	1,016	500	27,801	14,910	44,227	78	44,305
		99o	418	155,107	1,556,633	807,410	260,917	2,780,067	404,423	3,184,490
		99n	17	811	36,579	0	12,010	49,400	0	49,400
132-27-4 **	Sodium o-phenylphenoxide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	0	0	0	0	0	0	0
		98o	4	0	0	0	0	0	0	0
		98n	No reports							
		99o	5	0	0	0	0	0	0	0
		99n	No reports							
—	Strychnine and salts	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	5	0	0	0	5	171	176
100-42-5 **	Styrene	88	1,259	34,309,811	59,069	165	242,941	34,611,986	2,013,696	36,625,682
		95	1,573	42,059,571	4,570	209,945	96,078	42,370,164	2,741,458	45,111,622
		98o	1,563	54,259,569	243,133	345,945	322,736	55,171,383	2,053,921	57,225,304
		98n	106	22,243	15	161,738	14,398	198,394	10,577	208,971
		99o	1,549	54,731,130	3,168	191,124	369,150	55,294,572	2,098,614	57,393,186
		99n	89	13,000	266	0	22,064	35,330	86,622	121,952
96-09-3 **	Styrene oxide	88	6	2,314	0	0	0	2,314	750	3,064
		95	5	13	0	0	0	13	0	13
		98o	2	9	0	0	0	9	0	9
		98n	No reports							
		99o	1	7	0	0	0	7	0	7
		99n	No reports							
7664-93-9 *	Sulfuric acid	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1,600	22,617,822	5,363	30,035	134,812	22,788,032	4,733,342	27,521,374
		98o	830	27,428,323	22,608	690,900	55,837	28,197,668	347,593	28,545,261
		98n	483	166,197,401	1	0	85,501	166,282,903	20,000	166,302,903
		99o	780	25,960,113	13,426	1,075,050	203,550	27,252,139	99,389	27,351,528
		99n	485	153,888,058	6	0	53,789	153,941,853	20,200	153,962,053

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Sodium fluoroacetate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	124,717	0	157	124,874	0
* Sodium nitrite	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	374,426	4,657	0	0	17,461,874	5,813,965	3,946,119	27,601,041	280
	98o	391,745	17,741	0	17	38,822,470	7,404,374	4,469,556	51,105,903	9,052
	98n	46,249	0	0	0	779,173	176,991	44,292	1,046,705	2
	99o	511,277	45,498	0	20	47,232,908	2,717,121	5,020,458	55,527,282	89,024
	99n	0	0	0	0	1,169,880	200,126	49,634	1,419,640	0
*** Sodium o-phenylphenoxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
Strychnine and salts	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	31,974	0	0	31,974	0
	99o	No reports								
	99n	0	0	0	0	161,966	0	177	162,143	0
** Styrene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	9,297,615	820,377	20,677,749	9,261,346	14,069,737	4,187,657	44,302,260	102,616,741	171,055
	98o	14,407,655	1,417,181	29,679,770	8,531,514	9,924,466	4,972,665	56,075,998	125,009,249	181,614
	98n	163,600	482,410	0	2,877,212	1,307,660	163,076	676,686	5,670,644	967
	99o	14,016,160	799,390	43,228,207	11,327,385	12,286,214	3,570,873	60,970,893	146,199,122	161,295
	99n	341,558	37,258	0	698,514	2,203,112	508,366	36,398	3,825,206	561
** Styrene oxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	35,337	0	0	0	13	35,350	0
	98o	0	0	30,000	0	0	0	9	30,009	0
	98n	No reports								
	99o	0	0	70,000	0	0	0	7	70,007	0
	99n	No reports								
* Sulfuric acid	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	686,624,536	5,892,020	66,777	24,524	652,611,988	11,622,000	24,070,854	1,380,912,699	86,027
	98o	242,489,671	1,193,466	43,000	41	166,391,954	4,589,826	28,293,387	443,001,345	42,086
	98n	1	15	0	17,184	152,227,525	327	165,301,643	317,546,695	1,893
	99o	252,112,029	1,012,934	28,000	1,680	151,138,271	2,105,677	27,733,672	434,132,263	41,025
	99n	0	1,595	0	0	171,822,760	85,332	153,898,955	325,808,642	302

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
2699-79-8 *	Sulfuryl fluoride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	355,007	0	0	0	355,007	0	355,007
		98o	3	466,000	0	0	0	466,000	0	466,000
		98n	No reports							
		99o	3	505,600	0	0	0	505,600	0	505,600
		99n	No reports							
35400-43-2 *	Sulprofos	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	247	0	0	0	247	0	247
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	No reports							
34014-18-1 *	Tebuthiuron	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	5	0	0	0	5	0	5
		98o	1	10	0	0	0	10	750	760
		98n	No reports							
		99o	1	755	0	0	0	755	750	1,505
		99n	No reports							
3383-96-8 *	Temephos	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	1	7	0	0	0	7	0	7
		99o	1	0	0	0	0	0	0	0
		99n	1	0	0	0	0	0	0	0
5902-51-2 *	Terbacil	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	4,608	0	0	4,608	0	4,608
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	No reports							
630-20-6	1,1,1,2-Tetrachloroethane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	8	7,011	0	0	0	7,011	2	7,013
		98o	7	8,612	5	0	0	8,617	2	8,619
		98n	5	952	0	0	0	952	67	1,019
		99o	11	5,232	0	0	0	5,232	1	5,233
		99n	3	141	1	0	0	142	734	876
79-34-5 *	1,1,2,2-Tetrachloroethane	88	13	43,865	1,903	0	29	45,797	128,750	174,547
		95	16	8,275	2,222	0	0	10,497	7	10,504
		98o	15	7,247	19	0	0	7,266	6,458	13,724
		98n	6	52	250	5	0	307	45	352
		99o	13	5,183	0	0	15	5,198	10	5,208
		99n	5	32	1	0	0	33	20	53

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Sulfuryl fluoride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	371,500	371,500	0
	98o	0	0	0	0	0	0	461,000	461,000	5,700
	98n	No reports								
	99o	0	0	0	0	0	0	505,600	505,600	0
	99n	No reports								
* Sulprofos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1,137	0	249	1,386	0
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
* Tebuthiuron	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1	0	0	0	1,000	1,100	1	2,102	0
	98o	4	0	0	0	860	870	1	1,735	0
	98n	No reports								
	99o	3	0	0	0	680	700	1	1,384	0
	99n	No reports								
* Temephos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	0	0	0	0
	98n	0	0	0	0	31,269	0	7	31,276	0
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	51,378	0	0	51,378	0
* Terbacil	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	5,070	7,558	4,608	17,236	0
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
1,1,1,2-Tetrachloroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,600,000	0	0	0	4,234,676	379,203	8,341	7,222,220	40
	98o	6,600,180	0	0	120,700	2,930,017	43,074	8,535	9,702,506	18
	98n	0	0	0	0	158,326	2,580,168	1,015	2,739,509	1
	99o	6,500,001	0	0	147,754	4,022,583	50,056	4,603	10,724,997	386
	99n	0	0	0	0	708,087	12,991	807	721,885	0
* 1,1,2,2-Tetrachloroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	6,200,000	2,233,342	846,600	880	13,754,898	150,324	10,503	23,196,547	40
	98o	6,692,000	2,339,618	597,000	0	10,254,173	119,300	8,847	20,010,938	803
	98n	0	0	0	2,214	479,168	2,560,430	125	3,041,937	0
	99o	6,492,000	3,095,391	0	0	11,976,729	53,056	4,773	21,621,949	294
	99n	0	0	0	0	386,882	0	39	386,921	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On-site Releases	Transfers Off-site to Disposal	
				Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
127-18-4	*** Tetrachloroethylene	88	748	36,124,485	33,314	72,250	82,144	36,312,193	1,385,378	37,697,571
		95	442	9,674,185	2,407	20,481	6	9,697,079	78,953	9,776,032
		98o	363	5,463,597	1,490	5,916	2,992	5,473,995	130,444	5,604,439
		98n	162	202,717	250	644	18,986	222,597	30,635	253,232
		99o	316	3,648,732	1,793	8,897	19,885	3,679,307	27,966	3,707,273
		99n	144	205,035	1	288	85,000	290,324	176,367	466,691
354-11-0	1,1,1,2-Tetrachloro-2-fluoroethane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	23,275	1	0	0	23,276	0	23,276
		98n	No reports							
		99o	No reports							
		99n	No reports							
354-14-3	1,1,2,2-Tetrachloro-1-fluoroethane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	10	0	0	0	10	0	10
		98n	No reports							
		99o	1	10	0	0	0	10	0	10
		99n	No reports							
961-11-5	* Tetrachlorvinphos	88	6	251	0	0	0	251	9,270	9,521
		95	5	626	5	0	0	631	4,200	4,831
		98o	4	360	5	0	0	365	0	365
		98n	No reports							
		99o	4	196	5	0	0	201	1,037	1,238
		99n	2	5	0	0	0	5	809	814
64-75-5	* Tetracycline hydrochloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	754	0	0	0	754	112	866
		98o	2	525	0	0	0	525	1,800	2,325
		98n	No reports							
		99o	3	0	0	0	0	0	4,300	4,300
		99n	No reports							
7696-12-0	* Tetramethrin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	0	0	0	0	0	0
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	4	10,080	0	0	0	10,080	0	10,080
		99n	No reports							
7440-28-0	Thallium	88	No reports							
		95	1	255	0	0	755	1,010	195	1,205
		98o	5	15	0	0	3,400	3,415	3,665	7,080
		98n	5	533	65	0	96,339	96,937	5	96,942
		99o	4	2,137	0	0	4,355	6,492	4,578	11,070
		99n	3	1,020	600	0	72,700	74,320	99,000	173,320

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
*** Tetrachloroethylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	46,318,487	6,830,809	8,865,647	781,602	26,279,022	2,315,885	9,666,477	101,057,929	14,474
	98o	127,767,543	15,593,463	3,641,487	603,157	25,248,412	1,088,051	5,464,380	179,406,493	36,279
	98n	5,857,745	975,944	434	2,898,228	1,516,150	4,609,315	248,825	16,106,641	130
	99o	109,300,986	9,663,877	3,140,705	306,463	10,455,129	913,107	3,685,756	137,466,023	30,551
	99n	12,178,051	442,582	887	4,858,731	4,189,196	6,145,006	323,794	28,138,247	86
1,1,1,2-Tetrachloro-2-fluoroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	6,600	270	0	0	0	0	21,000	27,870	0
	98n	No reports								
	99o	No reports								
	99n	No reports								
1,1,2,2-Tetrachloro-1-fluoroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	0	26,387	15	26,402	0
	98n	No reports								
	99o	0	0	0	0	0	67,130	15	67,145	0
	99n	No reports								
* Tetrachlorvinphos	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	330	0	17,000	47,000	1,020	4,244	4,395	73,989	0
	98o	350	0	44,000	26,700	870	11,640	211	83,771	0
	98n	No reports								
	99o	375	0	14,000	98,900	1,131	13,640	435	128,481	0
	99n	0	0	0	0	36,510	0	61	36,571	0
* Tetracycline hydrochloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	1,736	677	2,413	0
	98o	0	0	0	0	0	700	2,160	2,860	0
	98n	No reports								
	99o	0	0	0	0	0	2,001	4,501	6,502	0
	99n	No reports								
* Tetramethrin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	437	0	437	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	260	10,080	10,340	0
	99n	No reports								
Thallium	88	No reports								
	95	688,093	3,852	0	0	0	190	31	692,166	0
	98o	0	0	52,353	1	0	9	3,406	55,769	0
	98n	0	0	0	0	21,600	1	96,826	118,427	0
	99o	9	0	0	0	0	51	6,437	6,497	0
	99n	0	0	0	0	0	0	173,000	173,000	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries) (continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
—	Thallium compounds	88	4	253	0	0	250	503	1,256	1,759
		95	No reports							
		98o	4	1,060	250	0	409,000	410,310	259	410,569
		98n	28	34,505	749	0	10,756,608	10,791,862	2,302	10,794,164
		99o	4	654	750	0	252,800	254,204	1,583	255,787
148-79-8	* Thiabendazole	99n	31	4,617	2,129	0	3,029,157	3,035,903	60,062	3,095,965
		88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	3,929	0	0	0	3,929	0	3,929
		98o	3	0	0	0	0	0	0	0
		98n	No reports							
62-55-5	** Thioacetamide	99o	3	255	0	0	0	255	0	255
		99n	No reports							
		88	1	500	0	0	0	500	0	500
		95	No reports							
		98o	No reports							
28249-77-6	* Thiobencarb	98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	7	1	0	0	8	164	172
		88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	510	0	0	0	510	3,032	3,542
59669-26-0	* Thiodicarb	98o	2	286	0	0	0	286	760	1,046
		98n	No reports							
		99o	2	343	0	0	0	343	832	1,175
		99n	No reports							
		88	NR	NR	NR	NR	NR	NR	NR	NR
23564-05-8	* Thiophanate-methyl	95	2	376	0	0	0	376	500	876
		98o	3	359	0	0	0	359	5,966	6,325
		98n	No reports							
		99o	3	438	0	0	6,843	7,281	239	7,520
		99n	No reports							
79-19-6	Thiosemicarbazide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	502	0	0	0	502	0	502
		98o	7	431	0	0	0	431	442	873
		98n	No reports							
		99o	10	493	0	0	0	493	7,165	7,658
79-19-6	Thiosemicarbazide	99n	No reports							
		88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	No reports							
		98n	No reports							
79-19-6	Thiosemicarbazide	99o	No reports							
		99n	2	3	0	0	0	3	98	101

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Thallium compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	250	310,000	310,250	100,000
	98n	2,133	0	0	0	0	1	10,794,136	10,796,270	653
	99o	0	0	0	0	0	315	194,746	195,061	60,000
	99n	1,884	0	0	0	0	0	2,929,108	2,930,992	120,001
* Thiabendazole	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1	0	0	2,160	1,200	1,931	3,740	9,032	0
	98o	0	0	0	0	0	747	0	747	0
	98n	No reports								
	99o	0	0	0	0	1,500	5,094	75	6,669	0
	99n	No reports								
** Thioacetamide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	181,229	0	167	181,396	0
* Thiobencarb	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	620	3,162	3,782	0
	98o	747	0	0	0	0	198	1,772	2,717	1
	98n	No reports								
	99o	0	0	0	0	0	105	120	225	0
	99n	No reports								
* Thiodicarb	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,500	0	0	0	41,139	160	180	42,979	1
	98o	108,880	0	0	0	34,243	19,476	362	162,961	0
	98n	No reports								
	99o	84,500	0	0	0	35,246	11,073	1,200	132,019	0
	99n	No reports								
* Thiophanate-methyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	320	0	0	0	0	2,677	507	3,504	0
	98o	10,000	0	0	0	0	3,431	436	13,867	0
	98n	No reports								
	99o	11,800	0	0	0	0	13,725	2,810	28,335	0
	99n	No reports								
Thiosemicarbazide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	67,904	0	101	68,005	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

* Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
62-56-6	*** Thiourea	88	26	2,004	16,951	5,940	750	25,645	2,303	27,948
		95	26	1,630	1,487	5,000	250	8,367	4,269	12,636
		98o	27	1,422	358	1,250	250	3,280	5,895	9,175
		98n	4	0	0	0	0	0	0	0
		99o	23	789	257	0	250	1,296	1,108	2,404
		99n	6	213	1	0	0	214	189	403
137-26-8	* Thiram	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	61	2,856	50	0	0	2,906	98,617	101,523
		98o	64	3,279	22	0	1,751	5,052	81,375	86,427
		98n	3	15	0	0	0	15	25	40
		99o	58	3,231	30	0	589	3,850	64,788	68,638
		99n	5	42	1	0	0	43	222	265
1314-20-1	Thorium dioxide	88	3	1,580	0	0	0	1,580	677,549	679,129
		95	1	1	0	0	0	1	0	1
		98o	2	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
7550-45-0	Titanium tetrachloride	88	41	78,668	0	0	1,400	80,068	0	80,068
		95	33	20,299	0	0	0	20,299	32,282	52,581
		98o	34	31,991	0	0	0	31,991	380	32,371
		98n	3	0	0	0	0	0	0	0
		99o	33	27,302	0	0	0	27,302	260,390	287,692
		99n	1	0	0	0	0	0	0	0
108-88-3	* Toluene	88	4,008	300,007,182	196,957	1,473,666	644,168	302,321,973	9,620,391	311,942,364
		95	3,489	148,078,878	53,493	310,643	177,343	148,620,357	888,765	149,509,122
		98o	3,026	97,949,543	38,849	590,241	71,205	98,649,838	1,335,393	99,985,231
		98n	826	937,585	5,568	133,774	30,106	1,107,033	361,079	1,468,112
		99o	2,815	89,105,643	29,670	612,896	93,997	89,842,206	1,290,634	91,132,840
		99n	781	806,016	14,231	125,489	209,517	1,155,253	774,936	1,930,189
584-84-9	** Toluene-2,4-diisocyanate	88	257	165,062	0	0	1,040	166,102	36,178	202,280
		95	64	7,802	0	0	0	7,802	611	8,413
		98o	54	6,849	5	0	0	6,854	4,402	11,256
		98n	6	2	0	0	0	2	0	2
		99o	50	4,386	5	0	0	4,391	14,442	18,833
		99n	11	456	1	0	14,201	14,658	531	15,189
91-08-7	** Toluene-2,6-diisocyanate	88	189	492,192	0	0	510	492,702	9,444	502,146
		95	40	3,043	0	0	0	3,043	153	3,196
		98o	24	1,560	0	0	0	1,560	1,079	2,639
		98n	1	0	0	0	0	0	0	0
		99o	25	2,395	0	0	0	2,395	1,258	3,653
		99n	3	5	0	0	0	5	160	165

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
*** Thiourea	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	7,082	0	0	0	18,535	11,867	10,652	48,136	1
	98o	0	245	0	0	54,525	16,111	8,822	79,703	1
	98n	0	0	0	0	0	0	0	0	1
	99o	0	0	0	0	48,133	6,349	2,191	56,673	0
	99n	0	0	0	0	284,371	0	400	284,771	0
* Thiram	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	18,712	31,501	0	5	407	10,622	101,354	162,601	6
	98o	25,341	31,339	0	870	0	19,988	84,505	162,043	3
	98n	0	0	0	0	42,192	0	40	42,232	0
	99o	34,797	32,375	0	3,656	0	25,446	68,044	164,318	5
	99n	0	0	0	0	261,724	0	260	261,984	0
Thorium dioxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	26,000	0	0	0	0	2,600	1	28,601	0
	98o	3,100	0	0	0	0	0	330	3,430	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
Titanium tetrachloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	129,787	0	0	23,836,598	2,928	52,646	24,021,959	13
	98o	0	196,905	0	1	27,810,226	142,054	32,619	28,181,805	266
	98n	0	0	0	0	122,039	0	0	122,039	0
	99o	55,446,637	176,544	0	1	25,242,487	268,223	22,374	81,156,266	33
	99n	0	0	0	0	17,391	0	0	17,391	0
* Toluene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,003,613,351	25,307,195	214,670,733	78,806,874	192,185,056	19,537,051	145,298,684	1,679,418,944	370,444
	98o	1,062,804,514	24,129,747	238,757,500	77,001,628	245,631,750	23,615,937	99,929,853	1,771,870,929	621,102
	98n	30,295,476	3,635,211	303,316	76,869,911	19,686,833	11,314,621	4,234,873	146,340,241	350,349
	99o	986,797,975	25,860,200	226,221,212	84,625,376	255,666,630	22,101,062	90,774,344	1,692,046,799	425,170
	99n	32,381,067	425,958	618,910	72,640,417	29,935,236	13,277,239	1,237,129	150,515,956	206,312
** Toluene-2,4-diisocyanate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	427	0	37,664	16,408	3,311	20,201	6,224	84,235	13
	98o	393	440	1,410	9,546	13,193	23,162	9,398	57,542	389
	98n	0	0	0	40	8,723	0	302	9,065	300
	99o	80	0	0	24,316	10,188	43,135	7,907	85,626	16
	99n	0	0	0	418	1,304,958	944	14,975	1,321,295	0
** Toluene-2,6-diisocyanate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	107	0	9,416	3,705	652	1,542	7,510	22,932	7
	98o	98	0	0	1,276	501	2,613	1,546	6,034	0
	98n	0	0	0	0	0	0	0	0	0
	99o	220	0	0	48	648	8,890	3,275	13,081	0
	99n	0	0	0	0	133,019	0	166	133,185	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
26471-62-5 **	Toluenediisocyanate (mixed isomers)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	196	48,856	105	0	275	49,236	26,263	75,499
		98o	176	55,406	0	0	534	55,940	32,450	88,390
		98n	4	0	0	0	0	0	0	0
		99o	176	35,162	2,500	0	256	37,918	29,085	67,003
		99n	7	38	1	0	0	39	6,985	7,024
95-53-4 **	o-Toluidine	88	18	46,922	1,902	250	5,024	54,098	670	54,768
		95	23	13,499	256	22,140	12	35,907	55	35,962
		98o	19	7,750	5	17,020	5	24,780	11	24,791
		98n	No reports							
		99o	20	7,714	1	10,010	0	17,725	15	17,740
		99n	5	22	1	0	0	23	620	643
636-21-5	o-Toluidine hydrochloride	88	No reports							
		95	No reports							
		98o	No reports							
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	10	1	0	0	11	164	175
8001-35-2	Toxaphene	88	No reports							
		95	No reports							
		98o	No reports							
		98n	5	13	0	0	25,476	25,489	113	25,602
		99o	No reports							
		99n	4	16	1	0	0	17	14	31
43121-43-3 *	Triadimefon	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	4	3	0	0	1	4	0	4
		98n	No reports							
		99o	4	0	0	0	0	0	0	0
		99n	No reports							
2303-17-5 *	Triallate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	588	0	0	0	588	24,076	24,664
		98o	2	519	0	0	0	519	21,640	22,159
		98n	No reports							
		99o	3	511	0	0	0	511	436	947
		99n	1	2	0	0	0	2	60	62
101200-48-0 *	Tribenuron methyl	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	1	0	0	0	1	0	1
		98o	1	1	0	0	0	1	0	1
		98n	No reports							
		99o	1	1	0	0	0	1	0	1
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** Toluenediisocyanate (mixed isomers)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	15,224	2,784	5,800,065	60,045	2,876,258	195,978	60,100	9,010,454	11,617
	98o	7,260	1,996	7,812,428	2,054,210	1,029,937	299,050	71,319	11,276,200	17,918
	98n	0	0	0	40	188,824	0	1	188,865	0
	99o	13,350	438	5,076,288	67,400	4,084,948	178,241	39,603	9,460,268	18,380
	99n	0	0	0	0	501,918	4,530	4,997	511,445	0
** o-Toluidine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	49	0	95,623	139,297	98,950	127,937	35,498	497,354	0
	98o	220	198	303,180	120,352	150,729	105,606	24,800	705,085	461
	98n	No reports								
	99o	0	0	1,953,205	501,259	150,020	67,511	17,689	2,689,684	5,132
	99n	0	0	2	24	607,614	0	639	608,279	0
o-Toluidine hydrochloride	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	191,883	0	168	192,051	0
Toxaphene	88	No reports								
	95	No reports								
	98o	No reports								
	98n	0	0	0	0	103,929	1	25,602	129,532	0
	99o	No reports								
	99n	0	0	0	0	134,998	28	27	135,053	0
* Triadimefon	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	280	1,984	4	2,268	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
* Triallate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	19,838	0	0	0	93,000	52,830	24,149	189,817	0
	98o	0	0	0	0	6,480	97,751	22,410	126,641	0
	98n	No reports								
	99o	840	0	0	0	1,700	47,151	1,446	51,137	0
	99n	0	0	0	0	11,125	0	62	11,187	0
* Tribenuron methyl	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	5,144	1	5,145	0
	98o	0	0	0	0	0	13,016	1	13,017	0
	98n	No reports								
	99o	0	0	0	0	0	14,832	1	14,833	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
1983-10-4 *	Tributyltin fluoride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	23	0	0	23	0	23
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	No reports							
2155-70-6 *	Tributyltin methacrylate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	25	23	0	0	48	0	48
		98o	2	14	10	0	0	24	0	24
		98n	No reports							
		99o	3	510	0	0	0	510	0	510
		99n	No reports							
78-48-8 *	S,S,S-Tributyltrithio-phosphate	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	1,730	2	0	0	1,732	0	1,732
		98o	2	250	36	0	0	286	0	286
		98n	No reports							
		99o	2	250	161	0	0	411	0	411
		99n	No reports							
52-68-6 *	Trichlorfon	88	5	253	0	0	0	253	487	740
		95	2	0	0	0	0	0	0	0
		98o	5	2	0	0	0	2	0	2
		98n	No reports							
		99o	2	0	0	0	0	0	0	0
		99n	1	39	0	0	11,242	11,281	6,058	17,339
76-02-8	Trichloroacetyl chloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	1	0	0	0	1	0	1
		98o	1	1	0	0	0	1	0	1
		98n	No reports							
		99o	1	1	0	0	0	1	0	1
		99n	No reports							
120-82-1 *	1,2,4-Trichlorobenzene	88	57	1,532,913	31,628	7,408	3,073	1,575,022	164,144	1,739,166
		95	31	168,490	259	12,500	0	181,249	41,648	222,897
		98o	26	159,689	191	8,960	20	168,860	1,651	170,511
		98n	8	775	250	5	0	1,030	507	1,537
		99o	27	168,783	266	7,100	10	176,159	1,409	177,568
		99n	6	1,142	1	0	0	1,143	543	1,686
71-55-6 *	1,1,1-Trichloroethane	88	3,921	180,841,849	95,624	1,000	204,923	181,143,396	5,947,625	187,091,021
		95	812	23,587,848	1,118	126	38,690	23,627,782	124,778	23,752,560
		98o	129	816,617	417	0	4,980	822,014	12,219	834,233
		98n	39	24,491	250	0	0	24,741	19,180	43,921
		99o	60	407,051	45	0	276	407,372	521	407,893
		99n	36	8,715	0	0	15,705	24,420	52,572	76,992

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* Tributyltin fluoride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	250	0	23	273	0
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	No reports								
* Tributyltin methacrylate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	25	9,096	4,320	48	13,489	0
	98o	253	0	0	419	0	0	34	706	0
	98n	No reports								
	99o	3,458	0	0	3,218	0	3,100	3,330	13,106	0
	99n	No reports								
* S,S,S-Tributyltrithio-phosphate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	2,541	316	1,717	4,574	0
	98o	0	0	0	0	10,276	691	367	11,334	0
	98n	No reports								
	99o	0	0	0	0	13,441	694	292	14,427	0
	99n	No reports								
* Trichlorfon	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	213	2,831	2	3,046	0
	98n	No reports								
	99o	0	0	0	0	0	890	890	1,780	0
	99n	0	0	0	0	1,331	0	17,339	18,670	0
Trichloroacetyl chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	1	1	0
	98o	0	0	0	0	0	0	1	1	0
	98n	No reports								
	99o	0	0	0	0	0	0	1	1	0
	99n	No reports								
* 1,2,4-Trichlorobenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	40,745	10,541	2,400	108,129	1,137,925	393,319	183,352	1,876,411	6,387
	98o	1,115,301	22,393	66,119	15,718	601,733	199,720	170,025	2,191,009	35
	98n	3,951	22,068	0	12,172	88,370	216	699	127,476	3
	99o	1,262,006	6,595	1,494,567	59,115	1,020,948	234,017	177,034	4,254,282	182
	99n	0	0	0	2,963	469,316	1	698	472,978	0
* 1,1,1-Trichloroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	60,033,102	3,743,437	3,718,698	1,058,904	1,108,250	1,338,934	23,404,962	94,406,287	14,559
	98o	1,173,558	157,496	2,508,207	489,624	455,010	236,114	781,290	5,801,299	19,818
	98n	1,098,055	7,057	474,196	2,246,894	1,424,735	661,718	28,588	5,941,243	35
	99o	580,713	61,748	1,537,877	506,102	1,635,948	134,998	407,002	4,864,388	851
	99n	1,096,513	144,831	505,336	978,273	2,695,365	317,689	30,340	5,768,347	137

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
79-00-5	* 1,1,2-Trichloroethane	88	29	1,741,442	5,303	0	89	1,746,834	19,810	1,766,644
		95	22	280,352	870	0	0	281,222	113	281,335
		98o	22	279,470	540	0	1	280,011	1,203	281,214
		98n	13	743	250	5	0	998	1,123	2,121
		99o	25	198,539	925	0	123	199,587	91	199,678
		99n	10	633	1	0	13,665	14,299	393	14,692
79-01-6	*,** Trichloroethylene	88	953	55,943,736	13,801	390	21,186	55,979,113	1,466,469	57,445,582
		95	747	26,265,512	1,477	550	3,577	26,271,116	74,145	26,345,261
		98o	578	13,137,700	867	588	800	13,139,955	98,024	13,237,979
		98n	150	30,270	10	5	0	30,285	28,029	58,314
		99o	498	10,510,064	1,043	0	138,522	10,649,629	113,378	10,763,007
		99n	139	25,542	1	0	10,345	35,888	52,705	88,593
75-69-4	* Trichlorofluoromethane (CFC-11)	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	54	959,461	410	22	0	959,893	272	960,165
		98o	28	440,509	1,484	0	0	441,993	1	441,994
		98n	14	2,258	250	250	0	2,758	108	2,866
		99o	29	392,445	1,000	0	0	393,445	2	393,447
		99n	11	7,141	1	0	10,078	17,220	14,674	31,894
95-95-4	* 2,4,5-Trichlorophenol	88	1	91	0	0	0	91	20	111
		95	No reports							
		98o	1	198	36	0	69	303	0	303
		98n	2	3	0	0	0	3	0	3
		99o	1	263	41	0	78	382	0	382
		99n	4	15	1	0	21,844	21,860	269	22,129
88-06-2	*,** 2,4,6-Trichlorophenol	88	3	250	50	12,000	0	12,300	10	12,310
		95	1	161	210	0	0	371	0	371
		98o	1	114	26	0	0	140	0	140
		98n	3	4	0	0	0	4	10	14
		99o	2	86	38	0	2	126	0	126
		99n	3	6	1	0	2,000	2,007	6	2,013
96-18-4	** 1,2,3-Trichloropropane	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	5	11,081	1,600	0	0	12,681	0	12,681
		98o	8	13,837	300	0	0	14,137	6,758	20,895
		98n	No reports							
		99o	9	13,931	2,300	0	0	16,231	0	16,231
		99n	3	28	0	0	8,189	8,217	4,412	12,629
57213-69-1	* Triclopyr triethylammonium salt	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	3	0	0	0	3	0	3
		98o	3	6	0	0	0	6	0	6
		98n	No reports							
		99o	1	37	0	0	0	37	0	37
		99n	No reports							

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



**Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)**

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
* 1,1,2-Trichloroethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	18,699,000	11,817,647	12,091,000	200,596	24,559,416	3,265,021	275,059	70,907,739	482
	98o	55,855,000	12,399,585	4,961,599	47	43,283,780	2,017,174	284,126	118,801,311	48
	98n	0	0	0	33,005	1,166,146	38,490	1,550	1,239,191	2
	99o	50,477,000	16,038,204	189,669	3,866	43,700,428	754,218	201,266	111,364,651	893
	99n	0	0	0	208,583	2,586,183	54	14,082	2,808,902	0
*,** Trichloroethylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	153,698,396	8,519,411	2,624,155	1,112,208	5,218,927	2,316,428	25,982,621	199,472,146	221,357
	98o	133,098,282	4,792,168	2,418,830	654,278	6,221,614	1,211,680	13,074,138	161,470,990	123,617
	98n	3,921,526	3,302	3,559	816,314	1,338,616	6,251,209	37,307	12,371,833	382
	99o	132,198,261	3,977,967	3,511,302	703,687	4,516,041	1,274,976	10,375,103	156,557,337	50,295
	99n	5,188,985	34,859	4,093	571,104	2,345,598	652,482	63,344	8,860,465	115
* Trichlorofluoromethane (CFC-11)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	138,712	227,287	618,422	170,699	4,200	291,955	961,314	2,412,589	1,038
	98o	0	138,866	210,039	10,519	63,773	280,199	441,666	1,145,062	27
	98n	0	0	0	117,603	569,323	13,150	2,135	702,211	1
	99o	36,075	92,780	1,189,772	31,000	39,251	441,197	400,283	2,230,358	8,689
	99n	47,450	0	0	93,082	578,508	10,859	22,108	752,007	0
* 2,4,5-Trichlorophenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	23,152	5	303	23,460	0
	98n	0	0	0	0	28,000	0	3	28,003	0
	99o	0	0	0	0	26,020	0	382	26,402	0
	99n	0	0	0	0	275,626	40	22,152	297,818	0
*,** 2,4,6-Trichlorophenol	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	1,294,115	0	371	1,294,486	0
	98o	0	0	0	0	1,100,000	0	140	1,100,140	0
	98n	0	0	0	0	28,000	0	10	28,010	0
	99o	0	0	0	0	1,264,603	46	120	1,264,769	1
	99n	0	0	0	0	177,026	0	9	177,035	2,000
** 1,2,3-Trichloropropane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	88,000	9	460,000	0	1,330,000	10,000,000	12,551	11,890,560	0
	98o	7,100,000	0	870,000	0	2,553,000	5,949,995	14,187	16,487,182	0
	98n	No reports								
	99o	9,300,000	0	678,000	0	46,789,300	660,000	16,243	57,443,543	0
	99n	0	0	0	0	495,664	0	12,629	508,293	0
* Triclopyr triethylammonium salt	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	4	110	3	117	0
	98o	0	0	0	0	0	70	6	76	0
	98n	No reports								
	99o	0	0	0	0	55	68	37	160	0
	99n	No reports								

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
121-44-8	Triethylamine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	153	2,138,526	27,705	309,512	14,010	2,489,753	17,181	2,506,934
		98o	174	1,580,464	26,281	186,190	23,755	1,816,690	56,293	1,872,983
		98n	22	1,641	0	0	0	1,641	20	1,661
		99o	168	1,868,060	17,937	28,659	35,032	1,949,688	289,541	2,239,229
		99n	17	3,139	0	0	0	3,139	264	3,403
1582-09-8	* Trifluralin	88	17	3,277	601	0	0	3,878	40,557	44,435
		95	23	17,144	92	0	8,250	25,486	24,490	49,976
		98o	18	9,180	250	0	5	9,435	29,888	39,323
		98n	2	13	0	0	0	13	0	13
		99o	19	5,183	0	0	0	5,183	14,631	19,814
		99n	1	2	0	0	0	2	0	2
26644-46-2	* Triforine	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	755	0	0	0	755	0	755
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	No reports							
		99n	No reports							
95-63-6	1,2,4-Trimethylbenzene	88	294	4,265,650	10,088	7,964	61,583	4,345,285	200,616	4,545,901
		95	817	7,701,951	8,822	2,886	43,921	7,757,580	53,456	7,811,036
		98o	887	7,764,901	7,582	6,650	14,751	7,793,884	167,577	7,961,461
		98n	634	136,060	940	0	3,045	140,045	13,533	153,578
		99o	888	7,731,735	5,226	2,295	9,318	7,748,574	100,280	7,848,854
		99n	597	153,057	1,611	0	1,054	155,722	10,377	166,099
639-58-7	* Triphenyltin chloride	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	1	0	0	0	0	0	0	0
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	1	3	0	0	0	3	0	3
		99n	No reports							
76-87-9	* Triphenyltin hydroxide	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	3	21	0	0	0	21	250	271
		98o	3	7	0	0	0	7	235	242
		99o	5	1,001	0	0	0	1,001	1,085	2,086
		98n	1	0	0	0	0	0	0	0
		99n	1	2	1	0	0	3	5	8
72-57-1	** Trypan blue	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	1	0	0	0	0	0	0	0
		98n	1	0	0	0	0	0	0	0
		99o	No reports							
		99n	3	5	0	0	0	5	163	168

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Triethylamine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	488,423	428,122	34,114	531,959	1,615,455	1,052,880	2,619,129	6,770,082	12
	98o	332,653	670,856	380,472	406,920	4,290,600	870,481	2,144,682	9,096,664	123
	98n	0	0	0	12,584	112,632	3,831	1,748	130,795	1
	99o	113,198	737,914	479,881	461,495	3,662,859	1,095,986	2,564,180	9,115,513	377
	99n	0	0	6,865	2,386	192,036	818	2,782	204,887	107
* Trifluralin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	2,107	0	0	3	99,980	76,583	54,675	233,348	9,313
	98o	80,000	0	0	0	6,880	75,025	30,415	192,320	0
	98n	0	0	0	0	29,827	0	10	29,837	0
	99o	89,000	0	0	0	1,700	71,489	23,220	185,409	0
	99n	0	0	0	0	38,510	0	2	38,512	0
* Triforine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	300	890	1,190	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	No reports								
	99n	No reports								
1,2,4-Trimethylbenzene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	15,823,608	1,477,380	5,089,783	2,992,920	9,502,994	470,799	7,927,617	43,285,101	11,102
	98o	14,389,987	1,864,096	8,156,093	3,654,699	10,397,545	674,090	8,004,511	47,141,021	4,438
	98n	1,750,455	614,296	12,446	196,546	617,270	115,464	832,097	4,138,574	149,373
	99o	19,070,696	1,573,546	11,602,529	3,417,205	10,669,320	543,438	7,932,184	54,808,918	5,784
	99n	2,786,953	103,691	15,322	1,458,587	341,872	33,778	136,315	4,876,518	25,772
* Triphenyltin chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	2,555	0	0	2,555	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	26,226	0	3	26,229	0
	99n	No reports								
* Triphenyltin hydroxide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	1	109,816	390	401	110,608	0
	98o	0	0	0	0	16,465	1,273	237	17,975	0
	99o	0	0	0	0	6,900	2,867	609	10,376	0
	98n	0	0	0	0	0	0	0	0	0
	99n	0	0	0	0	33,000	0	2	33,002	0
** Trypan blue	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	0	0	0	0	0	0	0	0	0
	98n	0	0	0	0	0	0	0	0	0
	99o	No reports								
	99n	0	0	0	0	192,524	0	168	192,692	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
51-79-6	** Urethane	88	11	145,123	0	0	0	145,123	1,350	146,473
		95	4	124	0	0	0	124	3,750	3,874
		98o	2	1,413	22	0	0	1,435	0	1,435
		98n	1	4	0	0	0	4	2,224	2,228
		99o	1	0	0	0	0	0	0	0
		99n	6	90	1	0	14,249	14,340	929	15,269
7440-62-2	Vanadium (fume or dust)	88	33	17,178	4,704	0	87,296	109,178	93,417	202,595
		95	19	14,649	5	0	144,086	158,740	28,780	187,520
		98o	20	16,018	16	0	128,809	144,843	4,749	149,592
		98n	9	38,102	600	0	573,228	611,930	89,250	701,180
		99o	27	15,105	283	0	100,235	115,623	17,242	132,865
		99n	8	3,000	400	0	414,925	418,325	169,011	587,336
50471-44-8	* Vinclozolin	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	2	0	0	0	0	0	0	0
		98o	2	10	0	0	0	10	750	760
		98n	No reports							
		99o	1	0	0	0	0	0	0	0
		99n	No reports							
108-05-4	** Vinyl acetate	88	146	6,087,497	10,021	2,109,851	18,889	8,226,258	21,811	8,248,069
		95	156	4,106,027	8,269	783,829	1,717	4,899,842	45,052	4,944,894
		98o	195	3,344,047	3,665	285,141	1,125	3,633,978	108,410	3,742,388
		98n	12	35,943	0	0	55,000	90,943	18,957	109,900
		99o	185	3,354,275	3,948	286,764	2,029	3,647,016	35,406	3,682,422
		99n	12	28,832	0	0	36,311	65,143	336,802	401,945
593-60-2	** Vinyl bromide	88	2	4,950	400	0	0	5,350	0	5,350
		95	2	54,930	0	0	0	54,930	0	54,930
		98o	1	0	0	0	0	0	0	0
		98n	No reports							
		99o	2	500	0	0	0	500	0	500
		99n	No reports							
75-01-4	** Vinyl chloride	88	53	1,439,189	2,051	53	4,409	1,445,702	4,555	1,450,257
		95	48	1,044,665	525	33	1	1,045,224	15,645	1,060,869
		98o	46	884,214	78	149	0	884,441	68,039	952,480
		98n	9	1,473	0	5	0	1,478	1,175	2,653
		99o	45	846,885	105	405	1	847,396	477	847,873
		99n	6	1,691	1	0	0	1,692	13,538	15,230
75-35-4	* Vinylidene chloride	88	21	296,353	3,462	170	429	300,414	44,281	344,695
		95	24	193,550	642	0	0	194,192	260	194,452
		98o	25	179,391	311	218	0	179,920	3	179,923
		98n	8	1,903	250	45,812	82,000	129,965	12,354	142,319
		99o	25	155,891	132	99	0	156,122	8	156,130
		99n	8	6,644	1	0	14,945	21,590	929	22,519

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
** Urethane	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	1,165	4,742	5,907	2,500
	98o	0	0	0	0	26,432	0	1,435	27,867	0
	98n	0	0	0	0	142,049	0	2,228	144,277	0
	99o	0	0	0	0	0	0	0	0	0
	99n	0	0	518	1,473	680,048	0	14,765	696,804	0
Vanadium (fume or dust)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	191,454	54,731	217	0	0	820	188,573	435,795	0
	98o	29,920	44,826	0	0	0	0	146,404	221,150	0
	98n	0	0	0	0	0	0	683,751	683,751	0
	99o	113,633	35,862	0	0	0	2,809	132,442	284,746	27
	99n	0	0	0	0	0	0	479,721	479,721	90,000
* Vinclozolin	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	1,030	0	1,030	0
	98o	0	0	0	0	650	660	1	1,311	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
** Vinyl acetate	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	311,385	533,356	15,379,353	6,544,593	19,205,133	9,194,987	5,196,125	56,364,932	14,797
	98o	993,710	86,990	18,008,261	14,361,541	27,164,709	1,452,870	3,577,202	65,645,283	62,311
	98n	0	1	0	2,444,457	741,302	45,992	109,100	3,340,852	1
	99o	1,158,990	13,249	21,815,185	12,228,901	18,156,883	697,009	3,693,357	57,763,574	2,313,487
	99n	0	0	0	1,345,712	2,516,017	393,581	66,430	4,321,740	0
** Vinyl bromide	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	36	0	54,910	54,946	0
	98o	0	0	0	0	0	0	0	0	0
	98n	No reports								
	99o	0	0	0	0	0	0	50	50	1
	99n	No reports								
** Vinyl chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	318,121,038	90,685	23,368,507	20,853	40,034,145	55,842	1,051,733	382,742,803	31,509
	98o	377,999,298	857,715	40,383,408	14,028	36,705,295	275,230	873,395	457,108,369	19,820
	98n	0	0	0	6,752	320,294	315,826	1,421	644,293	1
	99o	421,183,195	785,132	28,607,150	13,644	35,675,866	439,386	888,888	487,593,261	57,478
	99n	139,884	0	0	124,028	378,842	101	1,587	644,442	10
* Vinylidene chloride	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,438,000	55	190,253	102,442	6,754,873	85,282	177,394	8,748,299	16,577
	98o	1,830,000	8,605	125,000	82,946	3,494,987	15,029	180,378	5,736,945	82
	98n	0	1	0	8,069	799,244	2,116	142,052	951,482	1
	99o	3,977,000	21,860	100,000	65,165	1,498,463	40,816	156,102	5,859,406	146
	99n	0	0	0	1,799	1,046,020	194	56,156	1,104,169	0

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the de minimis level of 0.1%.



Appendix A — Chemical-specific TRI Release and Waste Management Data, 1988, 1995, 1998, and 1999

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases Transfers Off-site to Disposal Pounds	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds		
—	Warfarin and salts	88	NR	NR	NR	NR	NR	NR	NR	NR
		95	No reports							
		98o	No reports							
		98n	No reports							
		99o	No reports							
		99n	4	10	0	0	0	10	327	337
108-38-3	m-Xylene	88	68	2,463,043	2,566	0	18,045	2,483,654	107,746	2,591,400
		95	61	1,151,489	892	569	13,838	1,166,788	8,650	1,175,438
		98o	74	1,192,267	4,292	4,199	860	1,201,618	29,929	1,231,547
		98n	12	4,315	5	0	0	4,320	10	4,330
		99o	70	929,445	85	3,578	3,945	937,053	45,753	982,806
		99n	14	14,881	0	0	3	14,884	0	14,884
95-47-6	o-Xylene	88	66	2,241,814	2,786	250	22,461	2,267,311	52,881	2,320,192
		95	67	1,384,483	869	569	485	1,386,406	1,152	1,387,558
		98o	82	1,345,071	960	3,088	41,350	1,390,469	101,998	1,492,467
		98n	22	1,885	5	0	0	1,890	779	2,669
		99o	80	871,321	82	3,379	44,284	919,066	138,162	1,057,228
		99n	19	11,910	0	0	3	11,913	0	11,913
106-42-3	p-Xylene	88	48	5,992,743	3,200	0	49,226	6,045,169	31,108	6,076,277
		95	39	2,937,312	532	569	29,401	2,967,814	1,261	2,969,075
		98o	51	1,841,632	725	3,227	55	1,845,639	18,212	1,863,851
		98n	8	13,269	5	0	0	13,274	0	13,274
		99o	45	1,799,010	87	3,578	280	1,802,955	22,692	1,825,647
		99n	10	22,169	0	0	290	22,459	2,106	24,565
1330-20-7	* Xylene (mixed isomers)	88	3,469	158,986,408	204,480	144,728	558,257	159,893,873	6,455,911	166,349,784
		95	3,323	97,708,785	33,834	123,396	99,686	97,965,701	583,967	98,549,668
		98o	2,863	68,714,039	51,887	121,085	41,455	68,928,466	818,947	69,747,413
		98n	818	573,493	5,328	2,788	70,548	652,157	690,535	1,342,692
		99o	2,712	66,131,554	24,818	49,979	42,882	66,249,233	1,079,734	67,328,967
		99n	774	502,625	4,940	37,541	211,146	756,252	1,042,463	1,798,715
87-62-7	*,** 2,6-Xyldine	88	2	337	1,537	0	0	1,874	0	1,874
		95	4	304	0	0	0	304	0	304
		98o	2	453	0	0	0	453	0	453
		98n	1	0	0	0	0	0	0	0
		99o	1	1	0	0	0	1	0	1
		99n	1	0	0	0	0	0	0	0
7440-66-6	* Zinc (fume or dust)	88	644	3,455,937	849,544	140,010	25,617,365	30,062,856	31,450,587	61,513,443
		95	437	2,047,893	45,159	0	6,402,574	8,495,626	9,629,895	18,125,521
		98o	419	1,318,346	9,556	1	7,677,150	9,005,053	8,201,172	17,206,225
		98n	39	2,647,359	31,044	294,942	66,841,176	69,814,521	261,445	70,075,966
		99o	405	1,227,091	15,306	1	2,322,910	3,565,308	13,770,162	17,335,470
		99n	26	2,411,681	7,900	0	53,878,527	56,298,108	182,685	56,480,793

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Warfarin and salts	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	No reports								
	98o	No reports								
	98n	No reports								
	99o	No reports								
	99n	0	0	0	0	309,501	1	338	309,840	0
m-Xylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	1,917,515	27,006	4,141,480	245,136	3,100,716	131,806	1,160,477	10,724,136	1,434
	98o	1,912,614	162,262	9,462,285	241,065	1,084,879	124,993	1,226,352	14,214,450	19,072
	98n	2,913	80	0	194,683	0	1,045	4,129	202,850	0
	99o	1,333,398	110,315	11,882,415	307,105	925,163	93,300	950,775	15,602,471	15,147
	99n	2,311	2,357	0	178,261	35,289	10,616	14,997	243,831	134
o-Xylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	317,695	59,486	15,563,897	1,859,258	2,219,346	814,980	1,448,714	22,283,376	11,493
	98o	102,107	14,743	6,965,568	1,756,281	2,049,794	815,174	1,401,232	13,104,899	14,902
	98n	1,260	475	0	192,004	49,441	552	1,999	245,731	3
	99o	75,426	7,358	7,989,008	1,838,625	2,063,253	409,431	1,151,419	13,534,520	13,451
	99n	972,480	1,406	0	181,552	0	4,662	11,963	1,172,063	67
p-Xylene	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	468,689	8,192	2,168,729	3,563	645,579	8,722	2,958,765	6,262,239	17,281
	98o	125,970	395	4,670,124	7,322	2,866,722	156,678	1,861,654	9,688,865	10,987
	98n	870	0	0	182,126	0	0	10,070	193,066	3,200
	99o	147,153	7	683,856	57,153	1,902,287	69,312	1,851,844	4,711,612	8,634
	99n	693	0	0	177,081	35,289	8,309	21,566	242,938	3,200
* Xylene (mixed isomers)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	135,260,404	41,489,747	141,804,106	70,025,436	55,806,217	9,880,737	97,056,001	551,322,648	239,363
	98o	101,018,976	35,322,088	140,723,082	58,328,397	63,502,224	13,603,886	71,036,122	483,534,775	179,438
	98n	29,465,352	3,616,563	730,790	85,960,710	10,113,113	8,961,696	3,806,685	142,654,909	75,797
	99o	102,068,245	34,015,903	118,627,966	56,045,748	59,080,021	9,062,560	67,283,081	446,183,524	160,291
	99n	30,948,750	601,639	990,581	52,241,890	10,032,127	11,364,163	848,122	107,027,272	204,117
*,** 2,6-Xylidine	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	8,000	0	300	258	254	8,812	0
	98o	0	0	22,235	0	0	0	453	22,688	0
	98n	0	4	0	0	0	0	0	4	0
	99o	0	0	0	2,900	17	0	1	2,918	0
	99n	0	0	0	4	0	0	0	4	0
* Zinc (fume or dust)	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	27,847,425	78,625,090	0	53,501	3,815,022	6,476,716	10,750,762	127,568,516	35,494
	98o	28,252,595	49,723,575	0	125,059	654,672	741,490	29,383,456	108,880,847	2,282,691
	98n	0	69,000	0	0	0	0	70,053,321	70,122,321	6
	99o	6,124,363	54,872,983	0	58,144	606,425	606,257	27,748,480	90,016,652	44
	99n	0	290,000	0	0	0	0	56,474,807	56,764,807	9

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.



**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**

Table A-1A. TRI On-site and Off-site Releases, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

CAS Number	Chemical	Year	Total Forms Number	On-site Releases					Off-site Releases	Total On- and Off-site Releases Pounds
				Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds	Total On-site Releases Pounds	Transfers Off-site to Disposal Pounds	
—	Zinc compounds	88	1,667	7,265,829	1,201,410	109,555	113,361,611	121,938,405	84,389,611	206,328,016
		95	2,707	4,836,050	1,091,335	397,844	113,660,632	119,985,861	107,101,733	227,087,594
		98o	2,907	6,927,992	1,252,934	246,175	122,700,579	131,127,680	111,772,118	242,899,798
		98n	458	1,568,284	555,882	21,751,486	664,325,790	688,201,442	12,270,400	700,471,842
		99o	2,928	5,521,766	1,002,707	228,062	129,657,798	136,410,333	130,151,560	266,561,893
		99n	459	2,488,568	370,455	21,940,510	715,810,240	740,609,773	15,101,370	755,711,143
12122-67-7 *	Zineb	88	2	1,250	0	0	0	1,250	2,600	3,850
		95	1	0	0	0	0	0	0	0
		98o	1	100	0	0	0	100	0	100
		98n	1	1	0	0	0	1	1	2
		99o	1	10	0	0	0	10	0	10
		99n	No reports							
—	Mixtures and other trade name products	88	176	3,450,870	59,460	0	18,699	3,529,029	10,662,177	14,191,206
		95	30	334,194	3,171	0	0	337,365	4,400	341,765
		98o	50	116,270	0	0	9	116,279	86,098	202,377
		98n	7	7,550	0	0	0	7,550	0	7,550
		99o	46	222,430	0	0	500	222,930	20,717	243,647
		99n	5	665	0	0	0	665	0	665
—	Trade secrets	88	4	0	0	0	0	0	0	0
		95	11	0	0	0	0	0	0	0
		98o	11	30	0	0	0	30	0	30
		98n	No reports							
		99o	3	0	0	0	0	0	0	0
		99n	No reports							
Total		88	60,312	2,180,639,873	41,919,468	161,915,411	405,909,382	2,790,384,134	422,713,934	3,213,098,068
		95	74,465	1,590,651,239	191,919,759	248,927,637	284,190,539	2,315,689,174	320,730,208	2,636,419,382
		98o	70,975	1,270,193,503	238,483,036	209,711,433	343,781,378	2,062,169,350	324,059,939	2,386,229,289
		98n	15,142	811,010,244	7,553,237	56,708,764	4,022,499,616	4,897,771,861	100,060,679	4,997,832,540
		99o	69,471	1,175,054,932	253,591,816	199,547,803	323,667,851	1,951,862,402	374,647,596	2,326,509,998
		99n	14,597	854,309,491	5,289,960	58,097,341	4,423,054,923	5,340,751,715	104,775,858	5,445,527,573

Note: On-site Releases are from Section 5 of Form K. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form K. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI Facilities that reported the amount as an on-site release. Breakdown of Underground Injection and On-site Land Releases (for RCRA Subtitle C landfills) began in 1996 reporting year.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NR: not reportable (chemicals added to the TRI list after 1988 or whose reporting definition has changed since 1988). No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.

**Appendix A — Chemical-specific TRI Release and Waste Management Data,
1988, 1995, 1998, and 1999**



Table A-1B. Quantities of TRI Chemicals in Waste, by Chemical, 1988, 1995 and 1998 and 1999 (Original and New Industries)
(continued)

Chemical	Year	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Zinc compounds	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	130,342,228	252,508,296	446,100	365,736	4,084,591	26,382,764	213,836,910	627,966,625	11,143,290
	98o	66,816,553	271,001,524	367,541	266,041	4,065,652	12,444,558	302,640,006	657,601,875	1,360,367
	98n	9,220,552	1,797,539	0	5,747	1,569,443	143,209	701,887,578	714,624,068	48,595
	99o	80,840,858	280,480,195	142,280	173,258	23,547,168	26,504,817	305,850,743	717,539,319	233,011,755
	99n	9,808,546	2,375,741	0	0	66,270	292,548	762,076,323	774,619,428	34,034,404
* Zineb	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	100	0	0	100	200	0
	98n	0	0	0	0	11,715	0	2	11,717	0
	99o	0	0	0	0	0	320	9	329	0
	99n	No reports								
Mixtures and other trade name products	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	8,025	19,282	96,280,793	375,381	72,738,249	294,743	384,186	170,100,659	1
	98o	6,651,848	9,249	1,367,661	14,955	23,598	67,846	143,441	8,278,598	16
	98n	3,775,989	0	0	0	0	0	7,392	3,783,381	1
	99o	39,297	0	700	43,758	239,015	8,465	267,533	598,768	7
	99n	0	0	0	0	0	2,599	665	3,264	0
Trade secrets	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	0	0	0	0	0	0	0	0	0
	98o	0	0	0	0	2,700	0	30	2,730	0
	98n	No reports								
	99o	0	0	0	0	0	0	0	0	0
	99n	No reports								
Total	88	NA	NA	NA	NA	NA	NA	NA	NA	NA
	95	11,253,331,442	2,340,012,471	2,740,693,446	504,296,260	6,504,643,933	604,897,307	2,588,477,206	26,536,352,065	30,108,369
	98o	8,407,381,641	2,071,439,013	2,827,695,743	487,588,775	5,913,717,613	592,216,295	2,475,386,574	22,775,425,654	26,311,489
	98n	204,380,355	37,327,609	11,399,201	413,103,773	629,209,581	90,988,751	5,118,407,472	6,504,816,742	1,613,324
	99o	7,839,852,848	2,134,897,467	2,806,098,993	511,631,406	6,850,326,119	571,669,556	2,384,303,476	23,098,779,865	305,727,127
	99n	198,496,815	35,157,658	10,762,603	267,664,335	754,327,458	72,630,384	5,056,288,914	6,395,328,167	506,658,122

Note: Data from Section 8 (Current Year) of Form R.

98o and 99o are data from original industries, 98n and 99n are data from new industries. NA: not applicable (waste management data not required for 1988 reporting year).

No reports: No reports received for the chemical in that reporting year.

*Chemicals that are currently active ingredients in EPA's Pesticide Product Information System (all pesticide products imported and/or manufactured in the U.S.) and/or Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Active Ingredients, including Special Review, Canceled/Denied or Suspended, and Restricted Use Pesticides.

**Chemicals meeting the OSHA carcinogen standard and, therefore, not reported when in a mixture at a concentration level below the *de minimis* level of 0.1%.